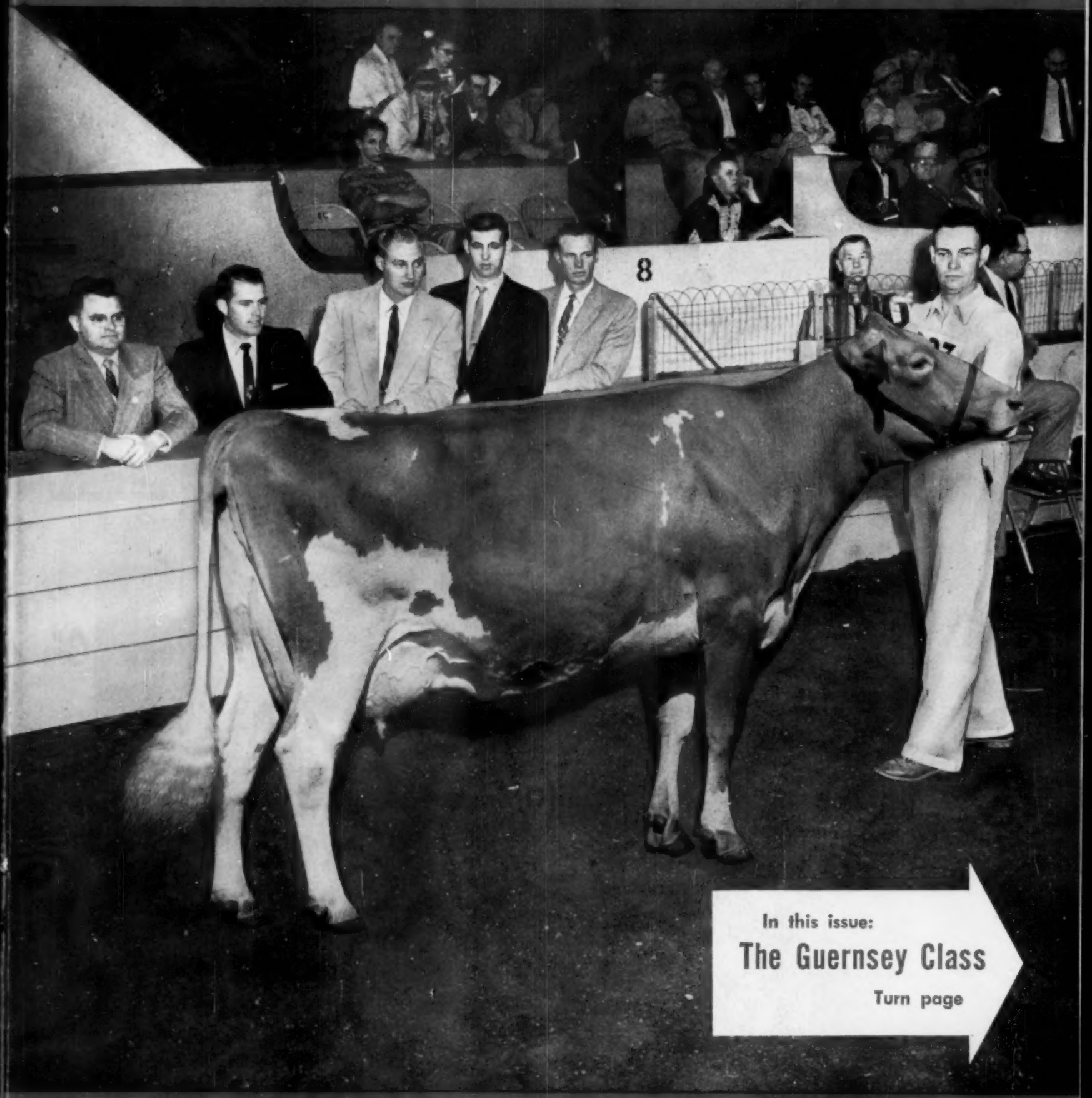
HOARD'S DAIRYMAN

JANUARY 25, 1958



In this issue:

The Guernsey Class

Turn page

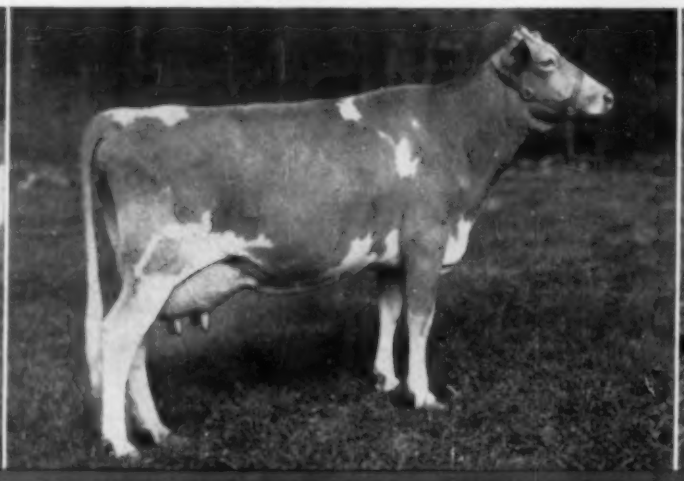
THE NATIONAL DAIRY FARM MAGAZINE

28th annual HOARD'S DAIRYMAN

COW JUDGING CONTEST

2nd class

The Guernsey Class



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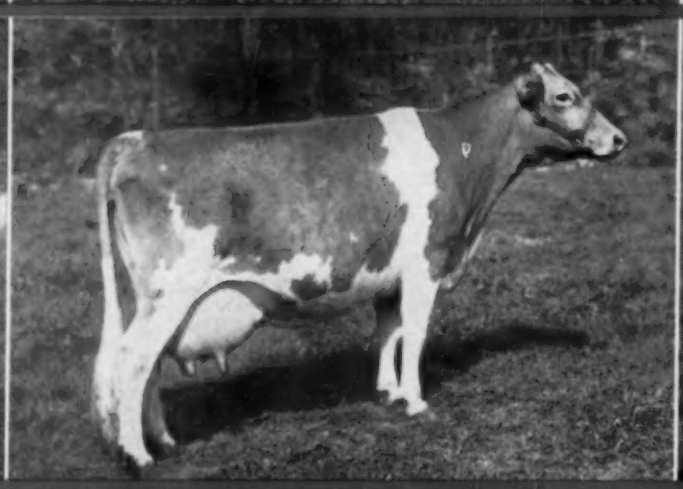

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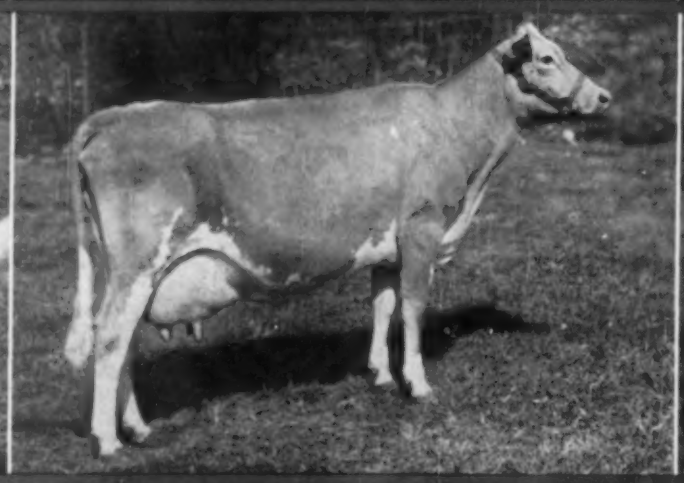

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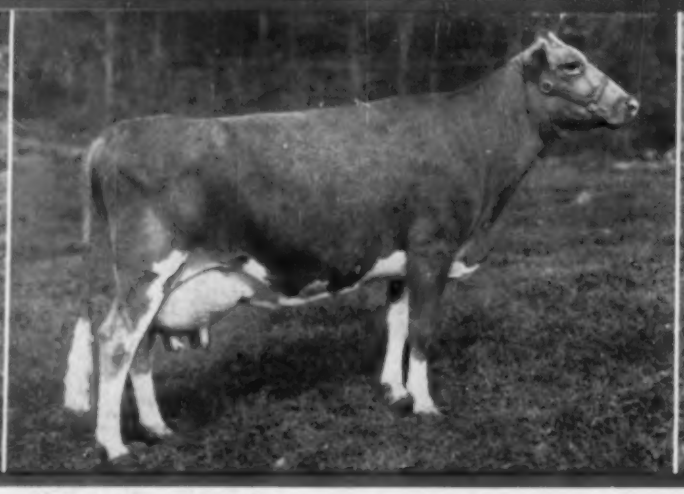

COW "D"

BROWN SWISS CLASS APPEARED IN PREVIOUS ISSUE, HOLSTEINS WILL BE NEXT
CONTEST RULES AND OFFICIAL ENTRY BLANK APPEAR ELSEWHERE IN THIS ISSUE
Don't mail your entry until you have judged all five breeds

you feed field fresh June Pastures all winter long

when you condition your hay with a **Cunningham** hay conditioner

Protein is the heart of your hay. Save it in the summer and you can stop buying it in the winter. You can save, and feed, up to 90% of nature's natural supply of protein-carotene when you condition your hay with a Cunningham.

Here's where it starts (photo upper left), the best hay crop you've ever harvested, Cunningham conditioned to guarantee the richest, full value feed you've ever had in your barn. You can see the difference in the field . . . crimped stems lose moisture immediately, curing at the same speed as the valuable, undamaged leaves. You can see the difference in mid-winter feeding (photo upper right). Smell its sweet, field freshness . . . it's soft, palatable, rich green in color and the top value leaves, nature's natural supply of protein, are in your manger not left in the field. Cunningham conditioned hay is complete feed . . . without supplements. Your cattle know it, and show it . . . as they eat more, waste less of this full food value hay.

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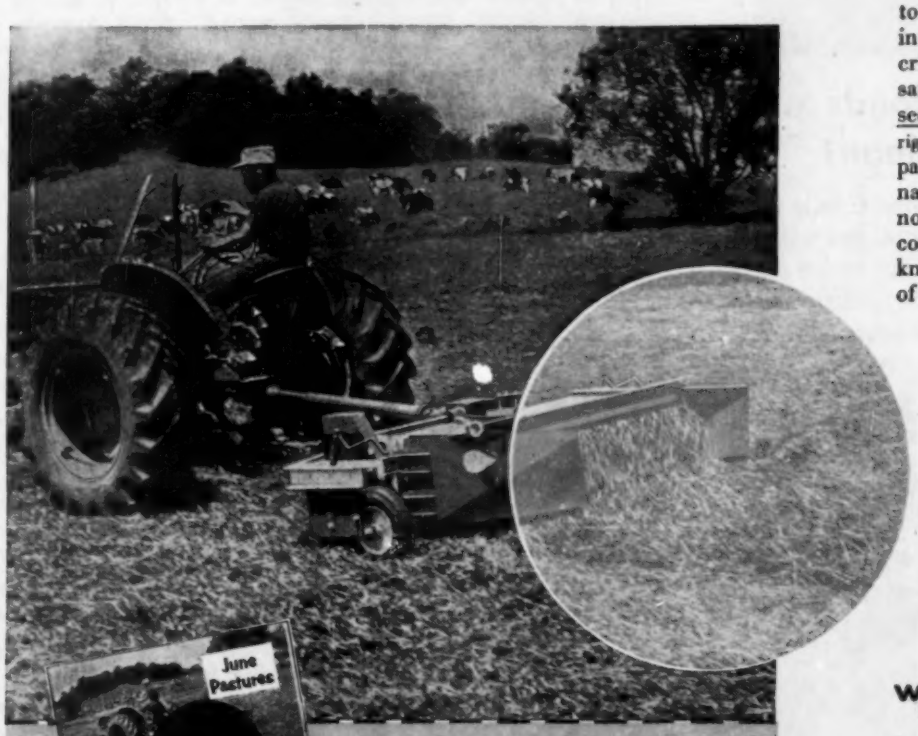

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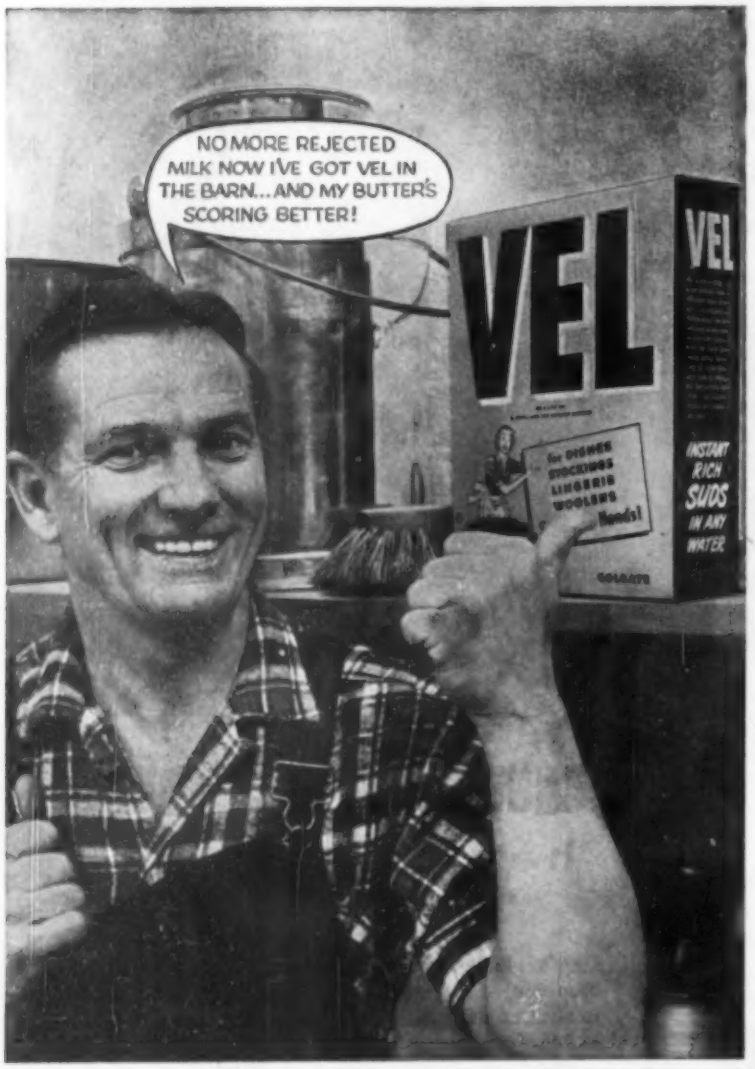
VEL helps bring in bigger milk checks!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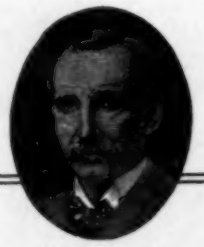
HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
W. D. Hoard & Sons Co.
Fort Atkinson, Wis.


W. D. Hoard

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Veterinary Editor, DR. E. A. WOELFFER

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January 25, 1958

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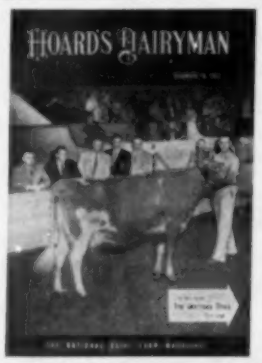

Our cover shows champions admiring a champion. Senecaside Meryl, 1957 national grand champion Guernsey female, owned by Woodacres Farm, Princeton, N. J., is being analyzed by the Kansas State judging team, winner of the National Intercollegiate Dairy Cattle Judging Contest. Both events took place at the National Dairy Cattle Congress, Waterloo, Iowa.

Coach G. B. Marion, left, is seen with team members Darrell Westervelt, Gilmore Dahl, Charles Michaels, and Jack Van Horn. Merton Sowerby, Woodacres manager, is at the halter. This is another reminder of the Hoard's Dairyman Cow Judging Contest, with Guernseys featured on the inside cover of this issue. There is a special division for college teams.

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Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

UNITY REACHED ON NEW DAIRY PROGRAM AS REPRESENTATIVES OF FOUR POWERFUL NATIONAL ORGANIZATIONS RESOLVE THEIR DIFFERENCES AND AGREE ON SELF-HELP BILL. NATIONAL GRANGE, NATIONAL MILK PRODUCERS FEDERATION, FARMERS UNION, NATIONAL CONFERENCE OF COMMODITY ORGANIZATION REACHED PERFECT ACCORD IN MEETING HERE. FARM BUREAU POSITION STILL UNDETERMINED. IT HAS TAKEN NO ACTION ON PRICE SUPPORT DROP OR NEW PROGRAM BUT MIDWEST FARM BUREAU DAIRY CONFERENCE ENDORSED THE "DESIRABLE FEATURES" OF SELF-HELP BILL IN SPITE OF KNOWN OPPOSITION OF NATIONAL OFFICERS. NEW BILL WOULD INCREASE NET FARM PRICE AT LEAST 60 CENTS PER HUNDRED ABOVE LEVEL BENSON HAS ORDERED APRIL 1. IF SURPLUS BURDENSOME, BASES TO BE USED. PRICE ON BASE MILK (95 TO 97 PER CENT OF LAST YEAR'S PRODUCTION) WOULD BE FROM 70 TO 75 CENTS PER HUNDRED ABOVE APRIL 1 SUPPORT LEVEL. PRICE ON SURPLUS LOWER.

DAIRY RESEARCH ADVISORY COMMITTEE ASKS FOR MORE RESEARCH ON D.H.I.A. AND SIRE PROVING. URGED ELECTRONIC PROCESSING OF RECORDS. RUMEN STUDIES APPROVED.

FREIGHT RATE BOOST REQUESTED AGAIN. RAILROADS ASK FOR 3 PER CENT OVER PRESENT RATES. MOST RECENT RAISE GRANTED LAST AUGUST.

TAX EQUALIZATION PROPOSED IN MEASURE TO PERMIT FARMERS TO EQUALIZE INCOME TAX PAYMENTS OVER A THREE-YEAR PERIOD. TAX LAWS MUST BE AMENDED.

CROP PRODUCTION IN 1957 MATCHED PREVIOUS RECORD HIGH IN SPITE OF SMALLEST TOTAL ACREAGE SINCE 1919. CORN CROP THIRD HIGHEST, OATS AVERAGE, GRAIN SORGHUM DOUBLED, HAY TONNAGE 10 PER CENT ABOVE RECORD. SOYBEANS AND BARLEY SET NEW HIGHS.

★ ★ ★

In YOUR next issue!

LET'S HUMANIZE THE MILKING MACHINE . . . From 50 years of experience milking cows, author "Hap" Huston tells how to get the most out of "bossy." You will enjoy reading and profit from this down-to-earth article.

WHY IS MY BARN FOUL SMELLING? . . . It's largely a matter of ventilation. This article reports actual cases where dairymen had trouble, and answers questions most frequently put to the author by farmers.

OUR COWS LIKE DRIED HAY . . . The 7th article in our Round Table series presents the experiences of six dairymen with a total of 40 years of experience in drying hay. Here are practical tips you would receive if you traveled nationwide to visit these men at home.

THE HOLSTEIN CLASS . . . in our 28th annual Cow Judging Contest. A great class to tempt your judging skill.

AND MANY MORE . . .

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Modern dairymen know it! New Dr. Hess Pen-FZ checks mastitis problems fast . . . without flare-ups. No experimenting with other mastitis treatments because even persistent cases quickly respond to Pen-FZ. This fast "clear-up action" leaves no room for quarter-trouble . . . gets cows back in the milking line almost overnight . . . keeps milk checks riding high.

Pen-FZ owes its mastitis-fighting success to a new germ-starving drug, nitrofurazone, found only in Pen-FZ. One of the powerful nitrofuran family, nitrofurazone kills all four kinds of bacteria which most commonly cause mastitis today. It leaves no resistant strains to cause flare-ups. In fact, nitrofurazone in Pen-FZ does the bacteria-fighting job so well that in over 10 years of actual use, no mastitis organisms have developed any significant resistance. That's why Pen-FZ is guaranteed to give effective results when used as recommended.

Just team Dr. Hess Pen-FZ with your good herd management for the most effective mastitis control. Buy Pen-FZ at your favorite store today.

For the complete story on lifesaving nitrofurazone and how it helps beat mastitis, write us for the booklet "Pen-FZ and the 10-point Mastitis Control Program." PC-7-3

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

On concentrated milk

The detailed writeup given to our concentrated milk in your December 10 issue was greatly appreciated here. We feel that your people did an excellent job and we, of course, are aware of the wide circulation this will get among the nation's dairy farmers.

There is one point which I would like to clarify, however. That concerns the quote attributed to Professor Calbert on page 1176.

"The patent application of the University of Wisconsin research team is for a public service patent. This means that anyone will be free to use the process but will be subject to the payment of royalties or licensing."

This statement is incorrect, but I hasten to add that it resulted from a typographical error on our part, not yours.

The statement should read something about as follows:

"This means that anyone will be free to use the process **without** licensing or payment of royalties."

I should mention, however, that we used commercial dairy manufacturing equipment in carrying on the process. It is the practice of some dairy equipment manufacturers to charge royalties for use of their equipment, rather than selling the equipment outright. These royalties, of course, also apply when the equipment is used for making the concentrate. Dairy plants producing the concentrated milk may have to pay royalties when using various pieces of processing equipment.

We appreciate the fullness with which your magazine covers new developments in the dairy industry. We think you did a fine job in giving farmers a complete and factual statement on this new process, and we're sorry that our error produced the one flaw we've noted above.

Wisconsin — NOBLE CLARK
Associate Director
Experiment Station
Univ. of Wisconsin

10 years of bliss

I'm afraid I have a gripe or two against scientists, of all kinds. In one farm paper a man has just perfected a pickle picker. If this goes on the market, how many more people will be out of work? There are many machines built that take labor away from honest and willing-to-work Americans.

Don't sneer and curl your lip and wonder what kind of a crank is writing this! You'll say, "Well, that's progress!" which I'll admit. But this "progress" is making a weak and spineless nation of us — (afraid of actual work) in every phase of life. Many can't even think for themselves. Oh, the scientists do, sure. We farmers are not supposed to grow big crops of corn and wheat. But these last-mentioned, thinking men, are producing with their over-worked brain cells, all kinds of drugs and vitamins so cattle grow and fatten faster, hogs develop in half their allotted time, so have an extra litter.

The fertilizers, liquid and dry, are so high-powered you can watch your crops grow, while one acre produces what 10 acres did a few years back. And, we are supposed to cut down our amounts in bushels. Does this make sense? We'll never cut down our surpluses in this crazy way of life.

I wish our government would put every scientist out of work, out of commission entirely for 10 years. Put them on a desert island somewhere by themselves. Let them have a grand vacation. Only the ones who are working on medicine for the health of all people should be allowed to carry on. No bigger crops, no new machines for 10 years. What bliss!

Michigan — M. B. MILLER

". . . broadminded policy"

I take this opportunity to compliment you and your staff on a fine magazine and a fair and broadminded editorial policy. Your magazine has been in our family since about 1930 and my subscription has until April 1970 to run.

We were reading Hoard's Dairyman when it was practically unknown in the South, and have seen it become very popular here.

Realizing the complexity of our farm problems and conflicting interests within agriculture, I am of the opinion that our national government should adopt the policy of "equal opportunity for everyone but subsidies to none."

Tennessee — ROBERT MOSLEY

Would guarantee income

If many, or all, of the present payments to support agriculture in this country could be eliminated and a new program for making direct payments to the farmers who really need help could be instituted, I believe the farm problem of today would be eliminated.

The payments to farmers would have to be regulated to provide the farmer with a wage slightly less than the national average wage. It could be computed from his federal income tax returns. The amount paid would be added to his total net income from both on and off the farm employment to bring his net income up to a specified amount (for example, $3,000).

If his net income was $3,000, or more, no payment would be made. Also, no payment would be made

"Faith, son, is what a farmer has when he buys a combine in February."

to compensate for any loss he may have incurred in the year.

The federal government would also have to set the amount of gross income the farmers would need (both maximum and minimum) to become eligible to participate in the program.

If such a program could be instituted, the benefits would be fourfold. It would, first of all, help the farmer who needs help. Secondly, it would have a regulatory effect on production by increasing or decreasing the amount of gross income needed by the farmer to take part in program.

Third, it would promote business and industry by increasing the purchasing power of farmers who really need it.

Fourth, it would result in lower food prices at the grocery store and thus encourage buying and business because a smaller portion of the national wage would be needed to provide food for the family and more could be used for other consumer goods which in turn would benefit the entire economy.

Washington R. E. WALSTER

From "Texas of the East"

Having been brought up in Delaware County, Now York, which was, until recently, the Texas of the East as far as cows are concerned, I must add my 2 cents. As a child I lived in a village, then went to an agricultural school, and married a farmer's son.

Now I am determined to help my husband as much as possible. I do go to the barn twice a day to milk, and help in other small ways outside. There are some things I believe are man-sized jobs and let the men care for them.

Nevertheless, I am not alone. Most of the neighbor ladies are in the barn at milking time and feeding time, and at the milk house when the pails are to be washed. Several neighbor ladies drive tractors, and care for large flocks of chickens or feed calves and pigs as well.

Don't people believe that fresh air, exercise, and good food are essential any more?

MRS. HARRY R. BRIGHT
New York

Needs "scientific" approach

I enjoy your articles on feeding, breeding, and so forth but I need help with smaller problems. What do other cowmen do in cases like these?

1. Cows that never lie down until they are washed and ready to milk.

2. Cows that stay in the farthest corner of the pasture until you get them up, then decide to run all the way to the barn, stand there and bawl that you're not there to let them in.

3. Cows that show no signs of heat until they are halfway down the lane on a night when you are late for supper anyway.

4. Cows that step all over a newborn calf trying to protect it from a cat.

I could go on, but you should understand my problem by now. So far the only solution I have found is to swear, and I know you people can supply me with a more scientific approach.

New Jersey JOHN SCHERHOLZ

"BETTER TRACTION, LONGER WEAR, TERRIFIC SERVICE SOLD US ON FIRESTONE"... say Robert and Cecil Siegloff, Waterloo, Iowa

Firestones are a "must" with the Siegloffs

When the Siegloff brothers need new tires or fast dependable service, they see just one man . . . their Firestone Dealer. Based on past experience they've found Firestones give them better traction and extra years of wear at lowest cost. And they really go for that special brand of Firestone on-the-farm service that makes a big hit with all middlewestern farmers.

Here's what Robert Siegloff says about Firestones: "We think Firestones are better from every angle. They definitely give us more traction . . . we've proved that to ourselves time and again. And we've never been able to find a tire that could outwear or outlast 'em. That kind of performance, plus the excellent service we get from our Firestone Dealer keeps us sold on Firestones."

The Siegloffs, like the majority of Iowa farmers, specify Firestone Champion Ground Grip® tires on all tractors. They've found Firestones bite and grip . . . where others spin and slip!

See your Firestone Dealer or Store soon. If you have any tire trouble he will loan you new Firestone tires to use while yours are repaired or retreaded.

Firestone

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QUALITY RATIONS

biggest bargain in ten years!

Amidst problems, there's good news for dairymen . . . perhaps never in the history of dairying has good feeding been such a profitable investment!

There's a simple economic yardstick that tells a dairyman how much feed his milk will buy.

Economists call it the milk-feed ratio. Today it's more favorable than it's been for at least ten years.

Surely here's good news. Since 1947, farm machinery costs have risen 60%, building and fencing materials 36%, fertilizer 12%, and labor 29%. Of the major cost items in milk-making and cow-keeping, only feedstuffs have declined . . . down 12% in the same period.

Dairymen and scientists agree that, up to a point, feeding a good cow *more* feed will help her produce more milk.

Feeding that same cow *better* feed will also help her produce more milk.

Feeding her *more* AND *better* feed will help her produce "all the milk that's in her" and, with today's record milk-feed ratio, "all the milk that's in her" is apt to be her MOST PROFITABLE PRODUCTION LEVEL!

Today it takes more milk per cow to pay for every hour of labor, every piece of machinery, every acre of land, every rod of fence or square foot of barn space. More and better rations are one way to get more milk per cow and more money for you and your family after ALL the costs of making milk are paid!

Call or visit your Purina Dealer for details of Purina's feeding program for dairy animals and the research-backed, farm-tested Chows and Concentrates he has available for your cows and young stock.

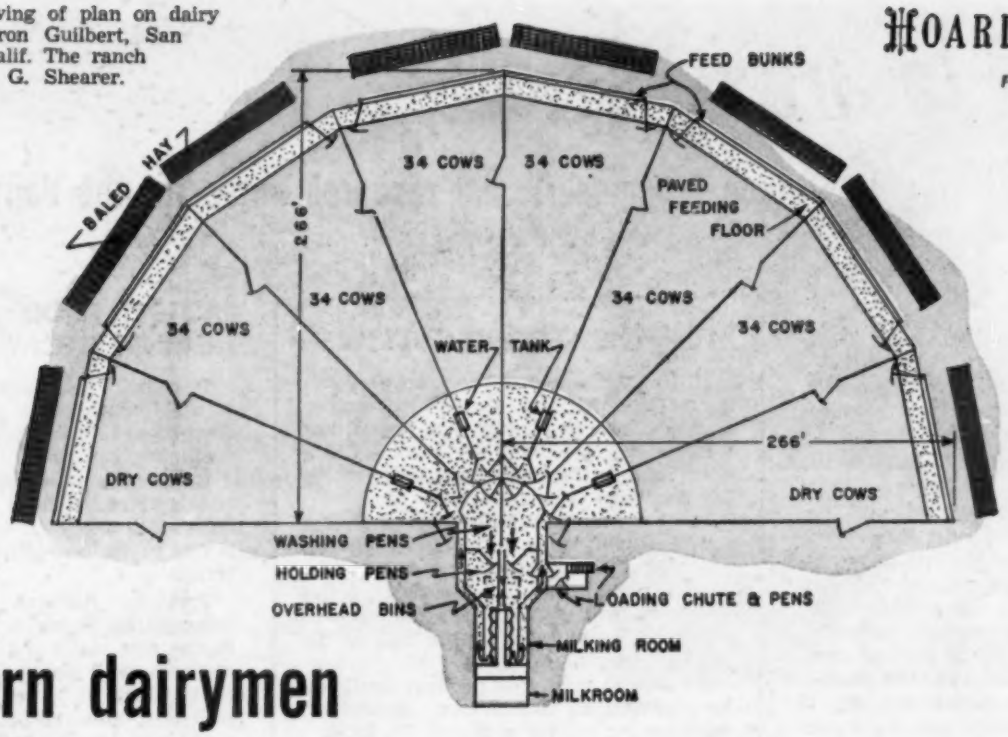
National Average Milk-Feed Ratios by Months

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
January	1.12	1.35	1.34	1.35	1.33	1.28	1.29	1.27	1.42	1.43
February	1.20	1.34	1.33	1.33	1.33	1.25	1.22	1.23	1.38	1.38
November	1.48	1.48	1.40	1.41	1.43	1.44	1.36	1.53	1.53	1.60
December	1.44	1.43	1.37	1.36	1.36	1.36	1.32	1.48	1.49	—

(Milk-feed ratios express pounds of grain ration one pound of milk will buy.)

RALSTON PURINA COMPANY

HOARD'S DAIRYMAN
FOUNDED IN 1885



DETAILED drawing of plan on dairy operated by Myron Guilbert, San Diego County, Calif. The ranch is owned by D. G. Shearer.

Western dairymen like lots . . . "pie-shaped"

by Thayer Cleaver and C. F. Kelly

ALTHOUGH the "pie-shape" (also called "cartwheel" or "wagon wheel") layout has more advantages for large herds, it also is advantageous for smaller herds which require no more than three or four lots.

Pie-shape layouts aren't new but their use is not widespread. Some advantages are:

1. All lots can be as close to the milking barn as sanitary regulations permit and all lots are same distance from milking barn.

2. This means that much less time and travel are required for moving cows between the milking barn and the lots.

3. The long cow-movement lane, which is necessary and common for rectangular lots, is eliminated and a relatively short movement lane, usually curved, is used.

4. Since all lots are closer, the cows are closer to the milking barn and routine daily inspection of cows is easier.

Some general principles apply to pie-shape layouts as well as to rectangular layouts. A paved feeding floor along the fence bunks and around water tanks is always desirable and is necessary in areas where there is an appreciable amount of rainfall during the year.

Pavement also is necessary in the washing and holding pens and is highly desirable in the curved cow-movement lane between the lots and the washing pens. Dairymen who have used these layouts prefer them to rectangular layouts and all prefer to have the lots slope slightly upward away from the milking barn rather than downward. This means that cross drainage of the lots about midway of their length is desirable. Drainage should not be toward feed bunks.

Sites that are flat or have very little slope should be tiled. Gates also must be provided on the side of the lots near the wide end so power equipment can remove manure.

The entire milking procedure is as follows: Lot gates at the narrow end of the lots are kept closed until milking time. If two operators do the milking, the layout is divided into three lots of lactating and one lot of dry cows for each operator. It is desirable to keep each operator's herd separate from the other herd.

The first cows to be milked will be from the lots next to the dry cow lots. Each operator (or a yard man) will open the gates at the narrow end of these two lots and drive an entire lot of 34 cows into its respective washing pen. As soon as all cows have cleared a lot, the lot gate is swung directly across and fastened to the opposite side of the circular cow-movement lane, which is also the washing pen fence. Then when cows return from the milking room, they have no choice but to return to the lot from which they came.

As soon as the 34 cows from a lot are washed in the washing pen, they proceed to the holding pen and the holding pen gate is latched behind them. When there are only 8 to 10 cows remaining in each holding pen, the next two lots of cows (one for each operator) are put into the washing pens.

When the last cows from the first lots have entered the milking room, the second lots of cows are put into their respective holding pens. Then when the last cows of the first lots have returned to their respective lots, their lot gates are closed so the cows from the second lots can return to their own lots after being milked.

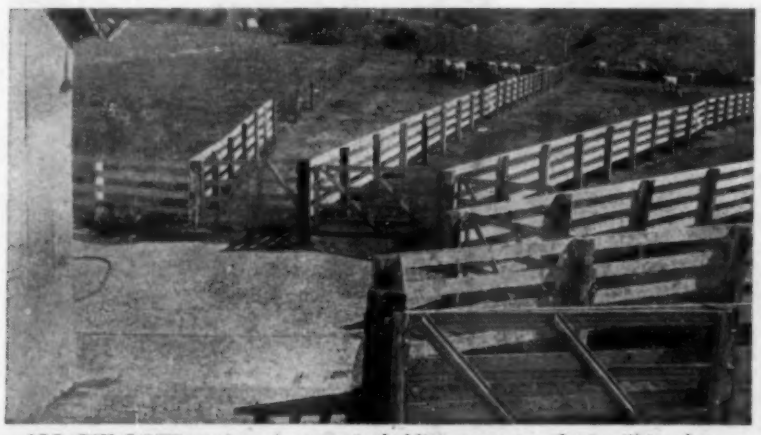
The procedure is repeated until cows in lots at center of layout have been milked.

If separation of the herds is not necessary, then only one washing and one holding pen will be needed and there will be two gates less to open and close. Also, if conventional string or stall barn is used, the layout is further simplified. Cow udders are usually washed inside string barns so both washing and holding pens are eliminated. Then the milking barn can adjoin the cow-movement lane which will be semi-circular instead of circular.

If a string barn is used, there will be some delay in emptying the barn of milked cows and refilling with unmilked cows. One lot of cows may fill only one side of a string barn or both sides.

THE END

The authors are, respectively, agricultural engineer, AERD, ARS, S.S. Dept. of Agriculture; and professor of agricultural engineering at the University of California.



ALL SIX LOTS center at concrete holding pen at end of milking barn. In mild climates, sprays for washing udders can be placed in concrete.

FENCE-LINE FEED BUNKS are located in outer perimeter of each lot. There should be a paved floor around feed bunks and water bunks.

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

WATCH FOR PIG ANEMIA

Now that the heavy spring farrowing season is close at hand, take precautionary measures against baby pig anemia, always a threat.

Anemia in baby pigs is usually caused by too little iron in the pigs' diet. There are several ways in which iron may be supplied.

The easiest way is to place a little sod in the farrowing pen from time to time to help supply a fresh amount of iron for the sow. Painting the sow's udder with a concentrated solution of ferrous sulphate is another method of supplying necessary iron. While both of these methods are effective, they must be administered frequently so the supply of iron is available almost every day.

A more modern method of supplying iron is to give baby pigs a solution of concentrated ferrous sulphate orally. It can either be dissolved and given to baby pigs in an oil can, or tablets containing copper and cobalt, in addition to iron, can be fed. These solutions require large doses and must be given at least once a week.

An injectable form of iron has recently been developed in England and is now on the market in this country. It is slightly more expensive than the other methods, but once it is done you can forget about the other supplements during the growth of the pig.

Unless baby pigs receive some extra form of iron within the first three or four days after birth, they may become quite anemic.

CAN COWS EAT FASTER?

Research is now underway at Washington State College to see if cows can gulp their feed down in eight minutes sharp and still produce as much milk as they did with the more leisurely "dinner hour."

Under the direction of Dr. T. H. Blosser, the purpose of the study is to determine the effect of pelleted grain rations on the rate of

consumption by cows in an elevated walk-through milking parlor.

With walk-through milking parlors becoming more popular, some dairymen complain that high-producing cows do not have time to eat all the grain they need during the brief period they are in the parlor.

In the experiment the cows are being given more than they are likely to eat as an incentive to eat faster in order to see how much grain they can eat in the eight minutes. The study will be completed late next year.

FOR THE SECOND-GUESSERS

If you were among the many second-guessers at the dairy shows last summer and fall, here is your chance to see how you would judge if you were on the firing line. Turn to the inside front cover where the Guernsey class appears.

We'll agree it isn't an easy class, but someone will make the official placing (he will be announced in the April 25 issue when the results are released). Rules of the contest as well as a list of cash prizes are found along with a copy of the official entry blank on page 87.

Be sure to save your placings until you have judged all five classes. Remember, deadline for entries is March 17, 1958.

LESS PROFIT IN TIMBER

With less residential home construction, farmers are getting less for timber produced in their farm woodlots. The price drop of the last six months is affecting lower quality timber most. This is particularly true in the case of hardwoods reaching the lumber, flooring, and veneer market, plus aspen and pine used for boxboard and paperboard.

A University of Wisconsin forester cites stumpage prices as an indication of the current market. Hard maple, oak, birch, and basswood now have a value range between $12 and $30 per thousand board feet. Difference in price depends largely on timber quality, ease of logging, and the market outlet available. Norway and white pine are bringing $30 to $50 as saw timber. Norway and Jack pine pulpwood will bring $4.50 to $5.50 per cord, $1 or $2 lower than last spring.

It will pay a farmer to do some of his own cutting. Selling stumpage (uncut timber) is like selling corn, oats, or hay in the field before it is cut. A farmer can make about $30 per thousand board feet by cutting, loading, and hauling, a good hourly wage.

Make sure of your market before cutting a single tree. Contact several mills. Check on prices, species in demand, product dimensions, grade specifications, required trim allowance, and scaling practices used.

COWS SHOW SILAGE PREFERENCE

Some dairymen claim grass silage thrown out by a silo unloader is more palatable than silage thrown out by hand. This prompted research workers at the Ohio Experiment Station to conduct some tests.

When cows had their choice of either meadow crop silage thrown out by the unloader and silage tossed out by hand, they definitely liked the mechanically-loosened forage better. In fact, they ate twice as much of this silage as the hand-forked silage.

On the other hand, when cows were offered just one kind of silage (either that thrown out by the motor or that thrown out by hand) they ate just as much of one as the other.

In another experiment, one group of cows fed silage thrown out by hand ate an average of 35.1 pounds per day, while the group fed silage from the same silo, but thrown out with an unloader, ate 35.5 pounds daily.

PROTECT FOOD AGAINST DECAY

Wisconsin scientists may make it possible to build tooth decay protection into foods — even those like candy and chewing gum which frequently contribute to decay.

It has been found that small amounts of materials extracted from oat hulls can greatly reduce tooth decay. It is believed the protection is due to bacteria-killing properties of the materials.

Previous research with laboratory rats showed that 10 per cent finely-ground oat hulls in the diet could reduce decay by half. Now research with partly purified extracts shows that as little as ½ per cent can do the job. The protective material probably could be manufactured at a low cost.

The next step is to find out exactly which of the compounds under study are responsible for the protection. Then they need to find the maximum effectiveness level and make sure there is no possible harm that can come from such levels in foods.

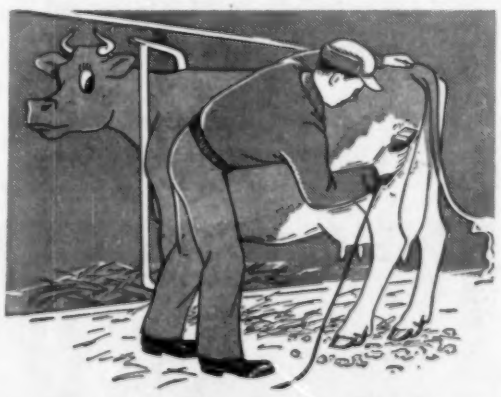
Wisconsin biochemists Fumito Taketa and Paul Phillips hope that after the identification and safety tests, the protective materials can be added to a wide variety of foods (as certain vitamins are now), to give constant and dependable protection to the entire population.

Results thus far help explain why people eating highly refined foods generally have more decay than those on diets of less fine foods. There seems to be a greater percentage of the protective factors in hulls, outer husks and straw — plant parts lost during the refining process.

TO PREVENT BARN ITCH

Frequently referred to as the winter-time menace, barn itch can be wiped out before it attacks your herd. The condition is caused by lice and common mange mites. Winter conditions and crowding are favorable to the bugs.

A Massachusetts entomologist, Dr. E. H. Wheeler, recommends starting your campaign



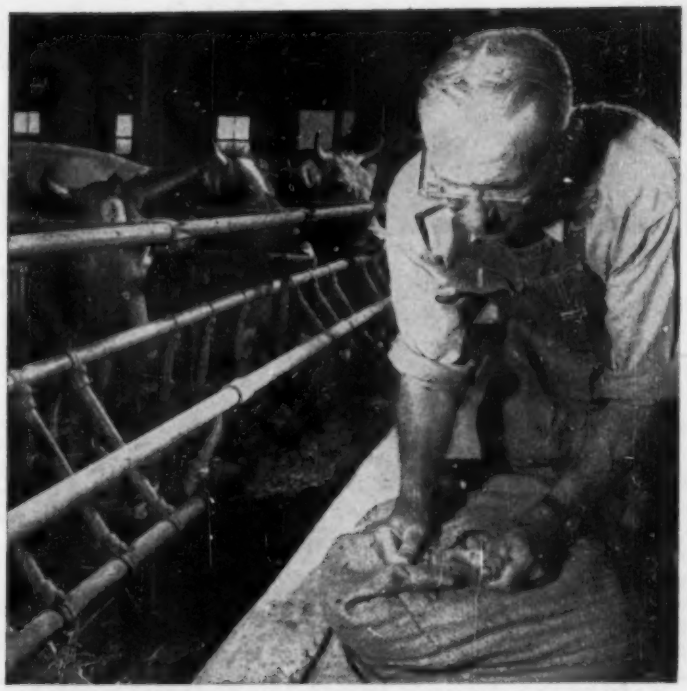
to control the bugs now. Even though you may not see anything, a few lice and mites on some animals during the next several weeks can set up the whole herd for a bad time later.

Wheeler suggests milking animals be kept clean at all times and the long hair be clipped from the hind quarters and lower parts. Apply rotenone-pyrethrum powders thoroughly. Make at least two to three applications at two-week intervals and again as needed later. If mange still appears, apply a lindane spray according to manufacturer's directions.

How to feed urea

When supplements are high priced, urea can lower your feed costs. It never should exceed 3 per cent of mixture by weight.

by H. R. Conrad and J. W. Hibbs



READ LABEL on commercial feed containing urea. If label lists, "Not more than 9 per cent protein equivalent from urea," it probably contains 3 per cent urea and is safe for feeding.

IN THE past 10 years, urea has been gradually finding a place in dairy feeds as a partial protein substitute in concentrate rations. As a result, dairymen and feed manufacturers have raised many questions regarding its proper use. Some of these questions follow:

How does urea compare in feed value with the usual protein supplements?

Many years ago German scientists demonstrated that ruminants, animals which chew their cud, could use non-protein forms of nitrogen such as urea. More recently conditions which govern proper use of urea as a feed have been fairly well established by research.

Urea occurs naturally in the blood of mammals, and as the principal end product of nitrogen metabolism, it is excreted continuously in the urine. It is also a normal constituent of many feeds along with other sources of non-protein nitrogen.

Feeding-urea is a synthetic organic compound, containing 42 per cent nitrogen, with a protein equivalent of 262 per cent. It is produced commercially by the fixation of nitrogen from the air. Its **only** value as a feed for cattle stems from the fact that the nitrogen in urea can be converted by the microorganisms of the rumen (paunch) into cell protein. The microbial protein then becomes available to the animal when the microorganisms are digested further down the digestive tract.

From a nutrition standpoint the oil meals furnish both energy and minerals, especially phosphorus, as well as protein. In formulating rations for dairy cattle, therefore, it should be kept in mind that it takes six pounds of grain concentrates (corn, oats, and so forth), plus one pound of urea to about equal the nutritional value of seven pounds of soybean oil meal.

Can urea replace all the protein supplement in dairy concentrate rations?

Feeding trials have demonstrated that urea can be used as a protein substitute for dairy cattle. Generally speaking, however, the maximum amount used should not exceed **3 per cent** of the total concentrate ration.

Using mixed grass hay and corn silage as roughage, workers at the Massachusetts Station found that the average daily milk production by mature cows fed urea through two lactations was 40.1 pounds compared to 41.1 pounds when soybean oil meal was fed on the same protein equivalent basis. These results show that high-producing dairy cows can use urea as a substitute for the protein supplement with this type of ration. These cows averaged more than 12,000 pounds of 4 per cent milk per lactation.

What factors influence the use of urea?

The use of urea is limited by the amount of urea nitrogen the rumen microorganisms can convert to protein. This varies with the amount of available energy in different rations. In order to convert urea to protein efficiently, enough readily available carbohydrate must be supplied to support rapid growth of rumen microorganisms. A grain concentrate mixture containing mostly starchy grains, such as corn and oats, provides these carbohydrates. Molasses also may be used.

Feeding trials at other experiment stations showed that urea was not used as efficiently as other protein supplements when urea-supplemented concentrates were fed at higher than recommended amounts. Also, the addition of extra crude protein in the form of urea to rations already balanced did not increase milk production. Thus, when urea is fed in excess of recommended amounts, the excess is wasted.

Urea in dairy cattle feed supplements is of little or no value where large amounts of legume or mixed legume and grass roughages are fed either in the form of hay or silage, since these usually contain enough protein to meet the requirements of normal-producing cows. Cows on excellent pasture do not need urea or any other protein supplement in their grain.

How much urea can be fed safely?

In addition to the limited efficiency obtained when urea is fed to dairy cattle in amounts above those recommended, certain toxic effects may result. It has been shown at the Wisconsin Experiment Station that feeding high levels of urea, equivalent to 60 to 80 per cent of the total protein in the ration, resulted in extensive kidney damage to dairy heifers. Hence, it is recommended that urea should not exceed 3 per cent of the concentrate mixture or 1 per cent of the total dairy ration. This amounts to about one-third of the total nitrogen in the usual dairy ration.

Can urea be used in rations for growing dairy cattle?

Carcass analysis and nitrogen isotope experiments have shown conclusively that dairy cattle can use protein derived from urea for growth.

Recent experiments completed at the Ohio Experiment Station showed that replacing soybean oil meal in the grain mixture with urea (protein equivalent basis) produced equally good growth when the grain mixture was fed at the rate of 2 pounds per day to heifers 12 to 18 months of age. Corn silage and mixed alfalfa-grass hay were the roughages fed. However, other experiment stations have shown that heifers fed very low protein roughage do not grow as well when urea is substituted for all of the protein supplement.

In calf rations urea has been used successfully. Calves fed free-choice on dry starter containing urea grew normally and were healthy.

How about urea-treated corn silage?

The practice of feeding urea-treated corn silage has been found to be a safe way to feed urea to dairy cattle. However, the economy and the efficiency with which urea nitrogen is converted to protein under these conditions has not been adequately tested. If high protein, urea-treated corn silage is fed liberally, adding urea to the concentrate mixture would be of questionable value.

How does the cost of urea compare with other protein supplements?

In comparing the cost of urea and other protein supplements it is necessary to consider the value of both the nitrogen and energy furnished. Using current feed prices and calculating the value of net energy contributed by each feed, the net cost of crude protein is usually less when supplied by **good-quality roughage** than when the source is either urea or soybean oil meal.

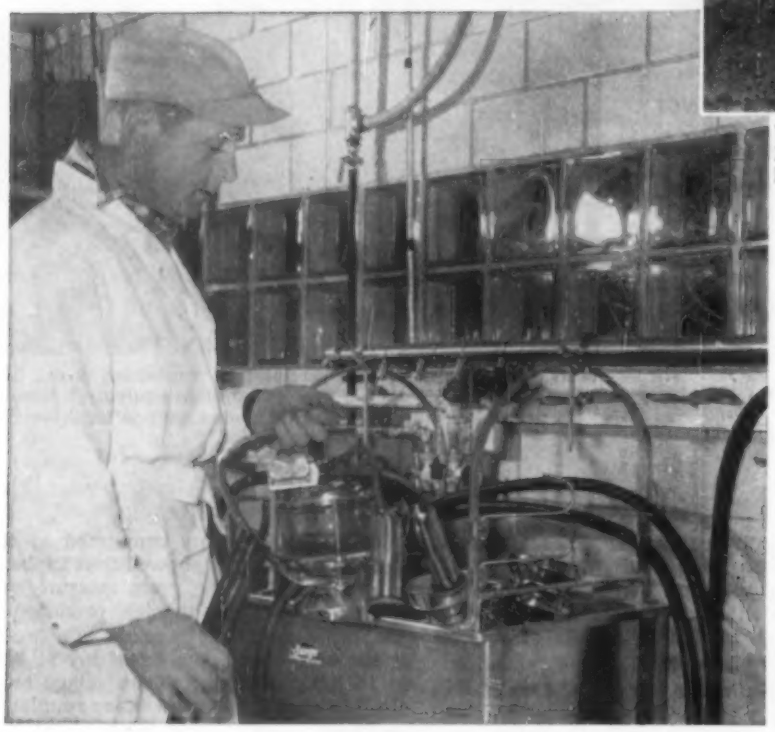
Whether or not the use of urea will save money for the dairy farmer depends on the price relationships of urea, protein concentrates, and cereal grains. For example, a 14½ per cent protein ration consisting of equal parts of corn and oats at $3 per hundredweight and soybean oil meal at $3.50 per hundred pounds would cost about the same ($3.07 per hundred pounds) as a 14½ per cent protein ration made with equal parts corn and oats at $3 per hundred pounds and urea at 7 cents per pound.

The cost of the 14½ per cent protein ration would be $3 per hundred when soybean oil meal costs $3 per hundred and $3.26 per hundred when soybean oil meal is $5 per hundred. Thus, when the cost of protein supplements are high, the proper use of urea in dairy rations can lower feed costs. **THE END**

The authors are members of the department of dairy science at the Ohio Agricultural Experiment Station.

HOARD'S DAIRYMAN ROUND TABLE

WAYNE HOSTETLER, Ohio, manages to handle his herd of 48 Holstein cows alone. With power equipment and pipeline milking he has been able to produce 541,439 pounds milk, 19,392 pounds fat.



Milk-per-man is our profit yardstick

These six dairymen average over 312,000 pounds milk and 12,000 pounds fat per farm worker. New "yardstick" helps them boost their net incomes.

HERD averages have long been our profit yardstick in dairying. For decades we have had high production per cow as the ultimate goal in high income farming. With labor costs constantly going up, many of us have wanted a more realistic guide which would indicate production per man.

Our readers will recall that four years ago, we published articles on the milk-per-hour theme. They struck a responsive chord in many quarters. Since then the milk-per-man idea has evolved as a useful farm management tool.

In all our years of work, we have never been so intrigued or stimulated by an article as we have in the presentation of this particular Round Table. Study it carefully because we are convinced everyone will benefit.

Arnold M. Pancratz, Iowa, has a remarkable herd of registered Guernseys that last year averaged 11,870 pounds milk and 623.3 pounds fat. His 31 cows and 200-acre farm are operated by himself and one full-time man. His production per man averages 183,985 pounds milk and 9,661 pounds fat.

Wayne L. Hostetler, Ohio, tops all comers with an astounding 541,439 pounds milk and 19,392 pounds fat per man. He handles his 48-cow Holstein herd all alone. Last year the herd averaged 11,280 pounds milk and 404 pounds fat.

Franklin J. Teague, North Carolina, is the only southerner on this Round Table. His 60 head of Holsteins and Jerseys averaged 10,051 pounds milk and 417 pounds fat last year. He has two full-time men with him on his farm, providing production per man of 201,020 pounds milk and 8,340 pounds fat.

Gerald Casler, New York, rivals Wayne Hostetler in production per man. Last year Casler's 49 Holsteins averaged 11,010 pounds milk and 397 pounds fat. Since his D.H.I.A. records show the equivalent of 1¾ men, the production per man becomes 431,592 pounds milk, 15,562 pounds fat.

Herschel Flower, Nebraska, has the largest herd of the Round Table. His 124 Holsteins averaged 12,397 pounds milk and 492 pounds fat last year. With four men to help him, Flower comes up with a production per man of 307,446 pounds milk and 12,201 pounds fat. In addition, he grows and sells about $5,000 worth of wheat each year.

George Robb, Michigan, has, by far, the highest milk production per cow, with his 28 Holsteins averaging 15,666 pounds. His average fat production of 580 pounds is second only to Arnold Pancratz. Robb has one full-time man plus two months of part-time help. If we assume 2.1 workers, his production per man averages 208,880 pounds milk and 7,733 pounds fat. In addition, he sells about 100 hogs per year.

Please appreciate that the foregoing summaries may not be accurate to the pound. We used D.H.I.A. figures to get the milk production information. Number of workers per farm was provided by D.H.I.A., our personal investigation, and other sources.

To the best of our knowledge, however, the summaries presented above accurately reflect production per man; give or take an insignificant amount.

It should not be concluded that even this yardstick is highly reliable as a profit barometer. While very useful, in our opinion, it has limitations too. For example, Pancratz and Robb, with higher herd averages but lower production per man, undoubtedly sell breeding cattle for higher prices which materially adds to their incomes.

Now let's put some questions to these men:

What major labor-saving devices, in order of importance, have meant the most to you?

Pancratz: Milking machine, barn cleaner, feed carts, bulk tank, combine, and field chopper.

Hostetler: Power loader for all manure, automatic silage feeders, stanchion milking parlor and pipeline, bulk milk tank (600-gallon), automatic pipeline and milking unit washer.

Teague: 1. Pyrex glass pipeline milker in 15-stanchion barn.

2. Bulk milk tank. Deliver every other day.

3. Loose housing arrangement for cattle with separate hay shed which has a hay rack on each side.

4. Silage unloader in upright silo.

5. Scraper blade on front of Cub tractor to keep concrete around barns clean.

6. Use of portable feed unit to make home-mix feed.

7. Manure loader on tractor to clean barns.

8. Automatic float and electric heater in water tank in barnyard where water is available every hour of every day all year, summer and winter.

9. Bale loader attachment on baler. Bale never touches ground.

Casler: Electric milking machine, running water, manure spreader, forage harvester, hay baler, large Diesel tractor and equipment, barn cleaner, Harvestore with unloader, side opening milk cooler, bulk feed saves a lot.

Flower: Milking parlor and pipeline system, bulk tank, loafing shed system, booster pump to build pressure to 90 pounds for washing parlor floors and walls, various elevators, feed mixer.

Robb: Field chopper and blower, feed carts, feed grinder, overhead grain and feed bins, litter carriers.

What labor-saving devices do you want or plan to add in the future?

Pancratz: Have none in mind.

Hostetler: Have a silo unloader ordered now. Automatic bulk tank washer.

Teague: Automatic conveyor to take silage to feed bunks. Plan to add farm-shop with more and better equipment. Plan to add some type of grain storage with easier method of handling grain.

Casler: I would like to have a milking parlor and bulk tank, plus an addition to barn so as to keep heifers and a few more cows in main cow barn. Would like another Harvestore silo.

Flower: Self-unloading roughage wagons and a truck-mounted manure spreader.

Robb: Gutter cleaner.

High production per cow is obviously important. To what factors do you attribute your production level?

Pancratz: The right kind of cows, regular milking hours, good pasture, high-quality roughage.

Hostetler: High-quality silage and hay, and lush pastures. Artificial breeding to proven sires. Production testing.

Teague: Improved feeding, artificial breeding, performance testing, improved management, better milking methods, culling intelligently, pride in ownership of better cows, desire for more profit per cow.

Casler: My production level is not so high but I consider it more profitable than some higher because I feed whatever roughage is available on farm and buy bulk feed to my best advantage. A man with good cows, good roughage, and good cow sense should have a good level of production.

Flower: Cow health, particularly udder health. Consistent good-roughage feeding. The use of five successive plus proven bulls. A good calf and heifer raising program.

Robb: Breeding; high-quality sires siring high production through their daughters. Good-quality hay. Planned rotated pastures. Regular milking.

What is your ultimate goal?

Pancratz: 700 pounds fat per cow.

Hostetler: 600,000 per man; 15,000 milk and about 500 pounds fat on 60-cow herd average.

Teague: 250,000 pounds milk per man; 12,000 pounds milk and 500 pounds butterfat per cow.

Casler: 500,000 pounds per man; 12,000 to 13,000 pounds per cow.

Flower: Any goal we might have would be raised as soon as we reach it. Our average for 1957 will be between 520 and 525 pounds of fat; 600 pounds fat is not out of reach.

Robb: 700 pounds fat herd average. By my own development 1,000-pound-fat cow.

What is your winter feeding grain ration? At what rate do you feed it?

Pancratz: 1,000 pounds ground oats
750 pounds corn and cob meal
500 pounds bran
300 pounds linseed oil meal
200 pounds beet pulp

A limit of 8 pounds of the above ration plus 6 pounds of bran.

Hostetler: Corn and oats mixture in proportion of 5 parts corn to 1 part oats.

From 6 to 10 pounds a day.

Teague: 750 pounds corn
800 pounds oats
300 pounds soybean or cottonseed meal
100 pounds molasses
50 pounds salt and minerals

Approximately 1 pound grain to 4 pounds milk (average for last year).

Casler: I generally buy grain feed in bulk of about 16 per cent protein wherever I can get it cheaper. Grind home-grown when available.

About 1 to 4½ +.

Flower: We like to feed ⅓ wheat bran, ⅓ ground oats, ⅓ yellow shelled corn plus 1 per cent steamed bone meal and 1 per cent salt. However, we vary our ration according to cost of different ingredients. This winter we probably will use some milo and barley.

An average of 9 pounds per-cow-per-day, with a maximum of 16 pounds per-cow-per-day.

Robb: ⅔ corn on cob, ⅓ oats. Soybean meal is top-fed.

Ground feed, 1 pound grain to 4 pounds milk. Concentrates, 1 pound to 10 pounds milk.

Do you have any "favorite" grain feeds? Why do you prefer them?

Pancratz: Oats and bran. I believe young animals grow better on oats than any other grain, and dairy cows seem to get more energy from it. Bran is a light bulky feed, similar in feed value to oats, and my cows seem to milk better on it.

Hostetler: No.

Teague: If I have a favorite grain, it would be oats. I have had better results since I have been feeding more oats. My cows like it better, and I can grow oats as successfully as other grains and with less labor.

Casler: No. I like a bulky ration with some bran and crushed oats.

Flower: Wheat bran and yellow corn. Wheat bran for its high protein, bulk and laxative effect, palatability, good fat content, and low price. Yellow corn for vitamin A, palatability, and high fat content.

Robb: No. We have tried them, but get higher production at less cost with soybean meal.

When do you put up hay?

Pancratz: At the first sign of blossoms.

Hostetler: When it is one-third in bloom (alfalfa).

Teague: Try to cut alfalfa and red clover in the early bloom stage, not more than one-tenth bloom.

Casler: I prefer early-cut hay but have some that gets pretty mature before cutting because of amount to do.

Flower: First cutting in the pre-bloom stage when second growth shoots begin to show at base of plants; other cuttings one-tenth bloom.

Robb: One-fourth to one-third field bloom.

How is it cured and harvested?

Pancratz: Left in the field until almost dry, then chopped and blown in the barn on hay drier. The drier is left on until the hay is completely dry.

Hostetler: First cutting is wilted, chopped, and put in silo with Kylage preservative added. Second and third cuttings mowed, crushed, and baled when cured.

Teague: Cut and crushed with hay conditioner, and field cured. Then baled as early as cured to preserve as much green color as possible. We use hitch-on baler and pull wagon to load bales directly from baler to wagon; saves time and labor.

Casler: Most with baler and cured in windrow. Bought used crusher for some this year. Next year expect to put in the Harvestore with about 40 per cent moisture.

Flower: Cured in windrow and baled.

Robb: Cut with hay crusher, field cured, then chopped.

What is your method of pasturing?

Pancratz: I have permanent bluegrass pasture; also pasture second- and third-crop alfalfa and brome.

Hostetler: Rotational; with direct cutting of grass and corn to supplement during certain times of the year.

Teague: Permanent pasture of Ladino and orchard grass; strip graze in early spring and rotate pastures for remainder of season. Temporary pastures — oats, barley, rye grass, and crimson clover in winter; Sudan and millet in summer; used by rotational grazing. (Grazed 345 days last year.)

Casler: Pasture meadows early and then cut these later for hay. Also permanent pastures. Cut green feed with chopper when all pastures get short.

Flower: We have some rotation pastures, about six weeks to two months each year.

Robb: Rotational fields of tame pasture (alfalfa, timothy, and clover mixture).

What kind of silage is fed? How is it put up?

Pancratz: Corn. As soon as it is dented.

Hostetler: Corn and grass. Mowed, wilted, chopped, and blown into silo with a preservative added. Preservative used is Kylage. Corn when well dented; refilled with later variety of corn.

Teague: Grass. Surplus temporary or permanent pasture is cut direct with a grass attachment on forage harvester. Cut at early-bloom or full-bloom stage and put in upright silo. I add 100 to 150 pounds ground corn and 4 to 6 pounds sodium metabilsulfite per ton. I have tried both these separately but like the combination better. Cows eat it well and produce well on it.

Casler: Mostly corn with sorghum. With forage harvester.

Flower: Atlas sorgho. In upright silos.

Robb: Hay and corn silage. Hay silage by chopper, two hours wilt. Corn silage by chopper at hard dent stage.

How do you feed roughages? Amounts? Times per day?

Pancratz: Silage; 35 pounds per day; two times a day. Hay; all they will eat; three or four times a day.

Hostetler: Alfalfa hay; 160 pounds for 50 cows; twice a day. Grass silage; 40 pounds per cow; once a day. Corn silage; 40 pounds per cow; once a day.

Teague: Alfalfa hay, red clover-orchard grass hay; I feed between 5 to 10 pounds per cow in summer, depending on other feed and quality, and 15 to 20 pounds per day in winter; I feed hay three times per day in winter, alternating alfalfa and the red clover-orchard grass hay. Summertime only one to two times per day depending on pastures.

I feed silage in feed bunks located on concrete pavement around barn and between lounging barn and hay shed. By winter I expect to have a round feed bunk and, by the use of a conveyor, drop silage on a cone-shaped metal form which will distribute the silage around the bunk within reach of the cows. Silage unloader will drop silage on a conveyor located under the silo chute.

Casler: Silage, most of the time about 15 to 20 pounds a feeding, twice a day. Hay, about all they will eat, twice a day. (I think it would be better to feed hay three or more times a day in small amounts but it takes too much time.)

Flower: Silage; 40 pounds, 20 pounds each feeding; twice daily. Ground alfalfa; 24 pounds, 12 pounds each feeding; twice daily. Green feed same as silage.

Robb: Alfalfa hay, 10 pounds, twice a day. Second cutting alfalfa-clover-timothy mix, 10 pounds, twice a day.

What mineral and other supplements are fed?

Pancratz: Mineralized salt, bone meal, and a simple mineral mixture.

Hostetler: Mixture of salt, bone meal, and limestone plus trace-mineral block free choice.

Teague: A mixture of salt and mineral is used in the feed mix; and another mix of 1 part salt to 3 parts steamed bone meal is fed free choice at all times.

Casler: None, except "blusalt."

Flower: Steamed bone meal and salt are the only minerals fed.

Robb: Steamed bone meal and trace-mineral salt, mixed ⅓ bone meal and ⅔ salt.

What are key factors in regular reproduction in your herd?

Pancratz: Try to have cows freshen every 12 months. Feed a liberal amount of grain but never overfeed it.

Hostetler: Breeding cows 60 days after calving. Keeping cows in good flesh.

Teague: Just like most dairymen, my goal is a calf for each cow each year. Each cow is bred as near three months after calving as possible. Breed artificially. After three times, if she fails to settle, she is promptly examined by veterinarian to diagnose trouble. If heat periods are irregular or in other ways a cow seems abnormal, she is examined and corrected *(Turn to page 81)*

ARNOLD PANCRATZ
Iowa

His 31 Guernsey cows average 623 pounds fat, a remarkable record. Works his 200 acres with one man.

FRANKLIN TEAGUE
North Carolina

He credits pipeline milking and loose housing as the major assets on his high milk-per-man Dixie farm.

GERALD CASLER
New York

Makes every minute count in his 49-cow herd. Wants to boost milk-per-man from 431,000 to 500,000 pounds.

HERSCHEL FLOWER
Nebraska

His herd of 124 Holstein cows is largest. A five-man operation, milk-per-man hit 307,446 pounds last year.

GEORGE ROBB
Michigan

His 28 registered Holsteins averaged 15,666 lbs. milk, 580 lbs. fat last year. Has goal of 700-lb. fat average.

Keep out "Jack Frost" . . .

It can be done with proper insulation of pump house, use of pipe heating cables, and electrically - heated cattle waterers.

by Gordon P. Barrington

INSULATED PUMP HOUSE on the George Lindstrom farm in Minnesota. Checking it with Lindstrom (L.) is D. W. Bates, an extension agricultural engineer, University of Minnesota.

WILL winter weather affect your water supply? Will your milk production fall because your cattle don't have water when they need it? When you go to bed do you wonder which part of your water system will require thawing in the morning?

It is not necessary to put up with frozen pipes or outlets. You can lick the freezing problem with available equipment.

To really prevent trouble from cold weather, the water system must be protected from the well to the outlets. A relatively small effort will pay big dividends in trouble-free operation all winter.

Let's look at the well end of the system. Here the pump, the tank, and the connecting pipes need protection. A freeze-up at this point in the system can result in an expensive repair job and will cut off the whole farmstead water supply.

Insulate pump house . . .

An insulated pump house will give proper protection for this part of your water system. The house should be just large enough to accommodate the pump and tank. It should have four to six inches of insulation in the walls and roof. For the walls exterior plywood or conventional sheeting and siding may be used. The roof should be covered with shingles or roofing paper and made so it can be raised to work on the pump and tank.

The house should be set on a concrete foundation. Before the concrete floor is poured, one inch of creosoted glass fiber insulation board should be placed around the inside of the foundation to reduce heat loss at this point. With a well-insulated pump house there may be enough heat from the motor and the water itself to prevent freezing.

In areas with severe winter weather, supplementary heat should be used. Probably the most satisfactory method is to use an electric heater of about 500 watts capacity. Small commercial heaters are available or regular heat lamps or light bulbs can be used. The heater should be controlled by a thermostat set to turn the heaters on at about 35 degrees. When constructing the pump house be sure the requirements of your state plumbing and well codes are observed.

Another method of protecting the well is to use an approved pitless adaptor. With this method, the discharge of water from the well is below the frost line. The tank is located in a nearby building to protect it from freezing. Pitless adaptors are available for deep well piston pumps, jet pumps, and submerged motor pumps. If you are installing a new well or reworking your present one, consider this method.

The well pit has been used successfully in the past as a means of frost protection. The pit is made large enough to hold the pump and tank and should be deep enough to be below the frost line. Many state codes no longer allow pits as they are difficult to maintain so as to insure sanitary conditions.

If you can use a pit, be sure to check with your state health authorities as to construction which will be acceptable. The roof should be insulated. In some cases a small heater may be necessary for protection in extremely cold weather, but usually this is not needed.

Protect water lines . . .

Protection of water lines between buildings is our next problem. Usually the best method is to bury the pipes below the frost line. The depth to which the soil will freeze will vary, depending on the average winter temperature and on the type of soil. In the extreme northern dairy areas it may be necessary to bury the pipes seven feet deep. In other areas, three or four feet may be adequate.

Your local dealer in plumbing supplies should be able to advise you on the depth which will give protection in your area. On any underground run, the pipe should extend five feet inside the foundation before it is brought up through the floor. This should prevent freezing in the riser which may occur if riser is brought up just inside foundation.

In some cases it may be necessary to make runs between buildings above ground. Probably the best method of protecting such runs is to use an electric heating cable or tape and suitable insulation. This method is used also for pipes inside unheated buildings. Several types of these cables and tapes are available.

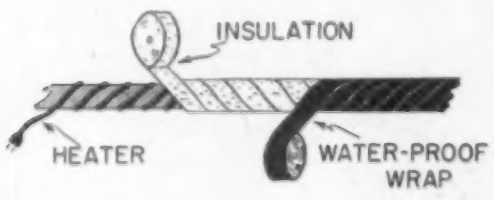
Lead-covered, soil-heating cable, neoprene-covered heating wire, plastic-covered heating wire, and electric heating tape all are satisfactory. These units contain a heating wire which is encased in a heat-resistant insulation. The tapes have two or more wires encased in plastic and are equipped with a plug at one end to be attached to the power source. The cables have a single wire in heat-resistant insulation, and usually are made in the form of a loop with both ends attached to a plug.

These units may be used without insulation if enough tape or cable is put on to supply about 10 watts of heat per foot. This much heat should protect a pipe in air to temperatures of 20 degrees below zero. The wattage of the tape or cable usually will be less than 10 watts per foot so that it must be spiralled around the pipe to provide enough heat. Lead-covered, soil-heating cable may be secured to the pipe with pipe straps. Plastic or rubber-insulated tapes and cables should be attached with adhesive tape.

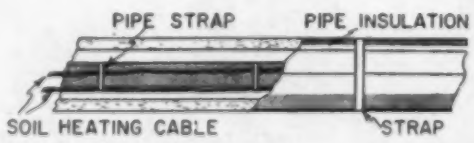
Insulation cuts costs . . .

An uninsulated job may be satisfactory as a temporary measure, but insulation will cut the cost of operation and should be used on permanent installations. With suitable insulation the heat required may be reduced to 5

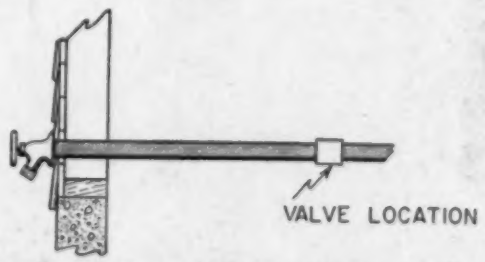
The author is an agricultural engineer at the University of Wisconsin.



HEATER TAPE is wrapped around water pipe followed next by a layer of insulation. Over this as added protection is a waterproof wrap.



SOIL HEATING CABLE is laid along pipe and held by straps. A layer of insulation covers pipe and cable, held in place with steel straps.



FROSTPROOF SILL COCK has the valve located two feet inside building. When water is shut off, it drains back two feet from outlet.

watts per foot to give protection at 20 degrees below zero.

Various kinds of insulation may be used with these units. Usually soil-heating cable is insulated with regular asbestos pipe insulation. This material is preformed and made to fit a particular size of pipe. It will be necessary to purchase insulation large enough to fit over the pipe and cable. For example: One-inch pipe insulation will be required to cover half-inch pipe when the cable is installed.

Many of the manufacturers of tapes and cables also sell other insulating materials. Usually these are narrow, flexible materials which come in roll form and can be wrapped around the pipe and heater. Some manufacturers also sell a wrap-on waterproof tape to cover the insulating material. This should be used if there is any chance of rain or water falling on the pipe. In general, water will destroy the insulation value of the material, so any insulation should be kept dry. It is desirable to use a fire-resistant material for insulation. It should also be rot-resistant. These requirements usually will limit your choice of material to mineral wool, asbestos, or fiber glass.

Follow directions . . .

Tapes and cables must be installed carefully according to the manufacturer's recommendations, if good results are to be obtained. Particular care must be exercised in wrapping the tape or the pipe to see that at no place does the tape or cable touch or cross over itself. Generally, when the heating unit is put on the pipe, the minimum spacing between turns should not be less than one-half inch.

The cost of operating these units will be less if a thermostat is used to control the units. Most manufacturers of tapes and cables sell a thermostat suitable for control of the unit for pipe-heating installation. The thermostat may be fastened to the pipe with tape or

(Continued on next page)

INSULATED CUP was used in loose-housing setup for 7 years.

TANK HEATER is needed where temperatures drop below zero.

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WORLD'S STRONGEST BARN CLEANER CHAIN !

YOU CAN SEE THE DIFFERENCE

Bigger, heavier and 50% stronger this new BADGER Chain has 50% more wearing surface at wearing points than the present popular Badger chain. Full center webb design eliminates any stretch. Pioneers in 4-way flex chain, Badger now has made the greatest advance in barn cleaner chain design.

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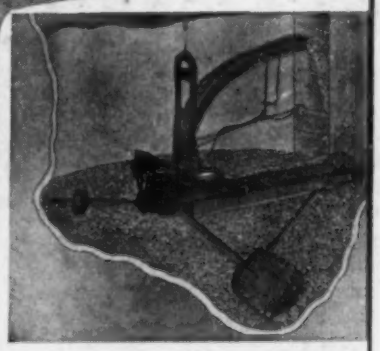
- DESIGNED FOR THE LARGEST BARNS

Paddle cut to fit your gutter size. Paddle is bolted snuggly into notch of forging.



A BADGER SILO UNLOADER will get your silage down for you with the flick of a switch; handles grass and corn silage, frozen or unfrozen; proven to be lighter, faster and easier to install.

Your Badger specialists are trained and equipped to make immediate installation. Most of the standard sizes in Barn Cleaners and Silo Unloaders are in stock at your dealer. DON'T WAIT — DO IT NOW.

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Bunk Feeders ☐ Student ☐

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Address

City State

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(Continued from preceding page)

with a special clamp, if one is provided. The thermostat should be covered with the same type and amount of insulation as the pipe and heater. If a knob or screw is provided for adjustment it should be left exposed. When installed on the pipe the thermostat should be set to turn the heater on at 35 degrees.

The thermostat may be mounted near the pipe rather than on it. With this type of mounting it should be set to turn on when the air temperature falls to 40 degrees.

Waterproof insulation . . .

Whenever tapes or cables are installed outside, extra care must be taken to waterproof the insulation and protect it from mechanical damage. It may be desirable to cover the insulation with a metal shield such as down spouting or irrigation tubing.

No matter how well the system is protected from freezing, unless the outlets are open you have accomplished very little. You will need faucets or hydrants which will flow in cold weather and watering devices which will remain open so that animals can drink regardless of the temperature.

Where an outlet is needed just outside a heated building, the frostproof sill cock may be used. This device has the valve located about two feet inside the building so that when the water is shut off the water is drained from that part of the pipe next to the wall. The valve handle is located outside the building.

When an outlet is needed in the yard or in unheated buildings, a frostproof hydrant may be used. This device is connected to an underground water line. The control valve is located below the frost line and controlled by an aboveground handle or knob. When the water is shut off, a drain is opened which allows the water in the riser to drain into the ground, thus removing the water from the freezing zone.

Some frostproof hydrants are not approved by state health authorities as there is a possibility of back siphoning occurring, should the water pressure fail. Before buying a frostproof hydrant, be sure it will be acceptable to health authorities. You should be able to get information on approved units from your state board of health or your county farm agent. Electrically-heated hydrants also are available which need not be drained and, therefore, cannot back siphon.

Many devices available . . .

A variety of watering devices are available with electric or gas heaters. In some cases your regular watering device may be protected by the use of cables, tapes, or special heaters.

Waterers are made by several manufacturers. The following types are generally available:

1. Cattle waterers which usually have two or more drinking troughs and will serve 75 to 125 animals.
2. Hog waterers which usually have two low drinking troughs and will serve up to 150 animals.
3. Combination waterers which have both high and low troughs and are used where hogs and cattle are run together.
4. The general-purpose drinking cup which may be installed to serve 25 to 30 cattle or 50 to 60 hogs.

When selecting a unit, consider the general construction which should be sturdy enough to withstand the rough treatment animals may give it. An insulated unit will be cheaper to operate than a non-insulated one. Insulation should be of a water-resistant type. Covers over drinking troughs also will reduce heat loss and keep out dirt. The waterer should be designed so that the drinking trough can easily be cleaned. Ease of making repairs and availability of parts are also factors to consider.

The waterer's location must be such that animals can make effective use of it. If, however, it can be located on the south side of a building or in some other protected location, operating costs will be much lower.

Install on concrete slab . . .

The waterer should be installed on a concrete slab 8 to 10 feet square. The slab should slope slightly away from it on all sides. Mounting the unit on a 2-inch curb

Plans available

COMPLETE working plans of this insulated pump house are available through the Hoard's Dairyman Plan Service. There is one sheet 11x16 inches, showing in detail every construction feature of this pump house. The farmer-carpenter can follow the plans with no difficulty.

These plans are available to Hoard's Dairyman subscribers at a cost of 50 cents per set of plans and bill of materials.

Hoard's Dairyman Plan Service,
Fort Atkinson, Wisconsin

Please send me by return mail the following plan and the complete bill of materials.

Plan No. 74001—Insulated Pump House—$.50

Your Name .....
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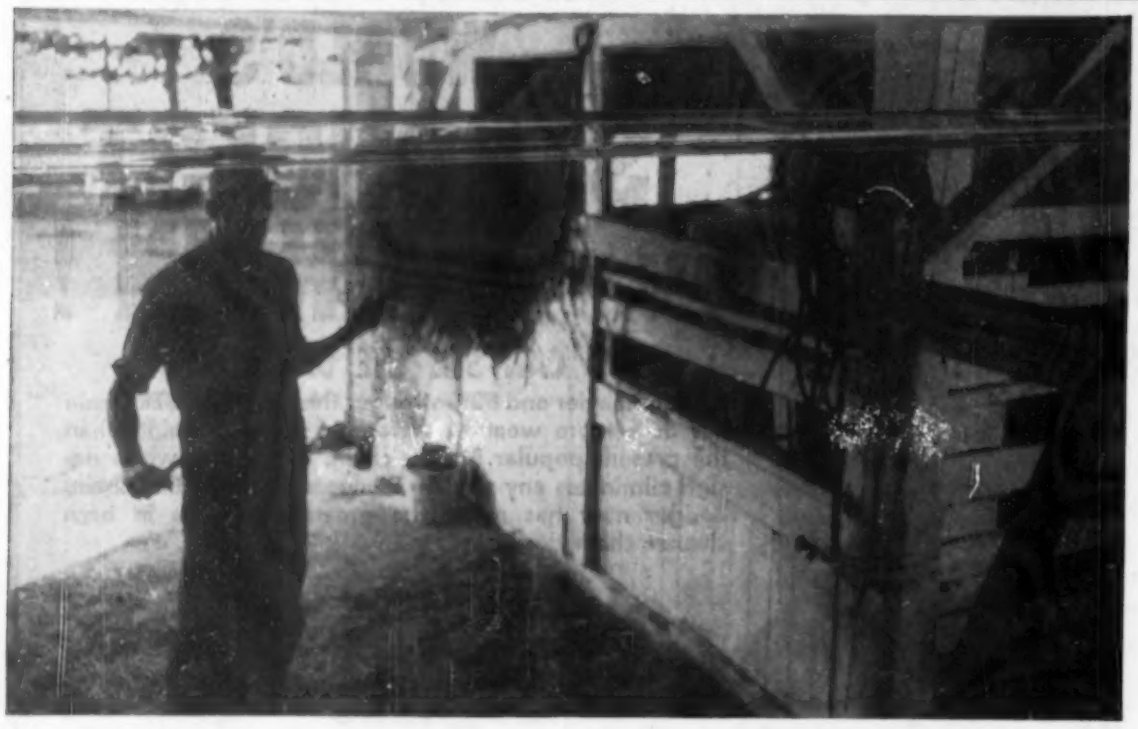


How to be sure your pipeline milking system *won't ever grow old!*

You save money from the instant your pipeline milker is installed.

But the biggest savings are over the long run — especially when you have a pipeline that can take rough treatment day in and day out, without ever growing old and inefficient.

For this durability, ask your dealer for a PYREX pipeline. Here's why:

You could wash and sterilize a PYREX milk line fifty times a day for fifty years—yet it would never pit, rust, or lose its youthful luster and crystal-clear transparency. And you can take a section of PYREX Pipe and drive nails with it, if you've a mind to. It's *that* durable. 2½ times as strong as ordinary glass!

Durability like this is just one reason why thousands of American dairymen already have PYREX pipelines in their barns.

Here are other advantages—given *only* by PYREX Pipe:

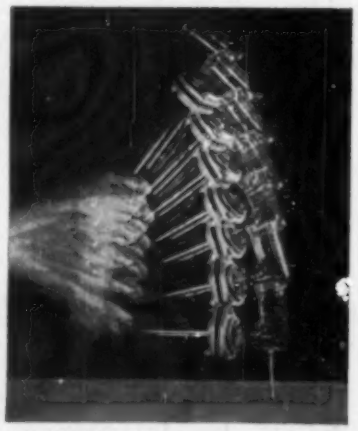
Complete visual control—You can watch the flowing milk or washing solution, and assure yourself that everything is going smoothly — or spot trouble the instant it appears.

Easiest to clean — PYREX Pipe is "smooth as glass"—because it *is* glass. No irregularities to trap bacteria or milkstone, as often found in other kinds of pipe.

Send for the booklet, "Know These Facts About PYREX Pipe." Simply write your name and address on the margin of this page, tear it out and mail to: Dairy Pipe Department, Corning Glass Works, Corning, New York, or call your local dealer representing:

DeLaval Separator Co., Farmer Feeder Co. (Chore-Boy Division), Hinman Milking Machine Co., J. C. Marlow Milking Machine Co., Rite-Way Dairy Farm Equipment Corporation, Perfection Manufacturing Corp., and Universal Milking Machine Division.

MILK PURITY-PROTECTED with PYREX® GLASS PIPE



"DOUBLE-TOUGH"—Yes, you can drive nails with it! Dairymen who are using PYREX pipelines report that breakage is no problem.

"Saves me 1½ hours a day," *reports William R. Trefry, Eaton Rapids, Mich., speaking of his* PYREX *pipeline. "Helps me maintain low bacteria count . . . makes it easy to keep my pipeline clean."*

CORNING GLASS WORKS, 27-I Crystal Street, Corning, New York *Corning means research in Glass*

will reduce corrosion at the base.

The general-purpose drinking cup should be mounted on an 18-inch pedestal, if it is to be used for cattle. The riser pipe can be brought up through a tile. If a large tile (10 or 12 inches) is used and extended 2 to 3 feet below the frost line, heat from the ground usually will prevent freezing of the riser pipe. These units frequently have thermostats which are set at the factory, but if an adjustable thermostat is provided it should be set at about 45 degrees.

As a safety measure, these units should be grounded to a separate ground rod driven at least eight feet into the ground. The frame of the waterer and any other nearby metallic materials should be connected to this ground.

Stock tank heaters operated by electricity, gas, or other fuels are available. These are of two types, (1) those which keep all the water in the tank warm and (2) those which keep a small portion of the surface open.

In general, the cost of operating a stock tank heater will be considerably greater than a waterer or cup, so if water under pressure is available, it probably will be good economy to drain the stock tank and install a waterer or a cup for winter watering.

Insulate tank . . .

If you don't have water under pressure available where you want to do the watering, a stock tank can be kept open with a heater. If you select a heater which heats the whole tank, be sure to insulate the tank. Four inches of good insulation can cut fuel costs 25 per cent for this operation.

One effective way to prevent freezing is to let the water run. The cost of pumping water may be less than the cost of heating. However, this method presents a problem of disposing of the waste water. If a suitable drain can be arranged, this method is effective.

If, in spite of all efforts, something does freeze, how shall we thaw it?

Probably the safest method is to apply hot water either by pouring it on the frozen part or by wrapping the part in rags and then pouring hot water on the rags. This is messy, but safe.

An open flame such as a blow torch frequently can be used, but caution must be taken to prevent fire. Don't leave a blow torch unattended. Sometimes the electric welder is recommended. This is effective as far as thawing the frozen part is concerned, but it may damage the welder. Your welder is built for intermittent service and usually is designed to operate about 12 minutes out of an hour. Continuous use such as is necessary to thaw a length of pipe may damage the welder.

Midwest Plan No. 74001 is available for 25 cents from the agricultural engineering extension service in any of the following states: Arkansas, Illinois, Indiana, Iowa, Kansas, Minnesota, Michigan, Missouri, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin.

Hoard's Dairyman readers in all states, however, may secure these plans plus a complete bill of materials from the Hoard's Dairyman Plan Service. Merely fill out coupon on opposite page. **THE END**

Uncle Joe: "What is a cannibal, Tommy?"

Tommy: "I don't know."

Uncle Joe: "Well, if you ate your mother and your father, what would you be?"

Tommy: "An orphan."

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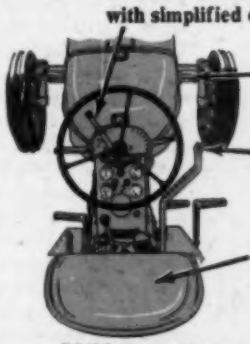

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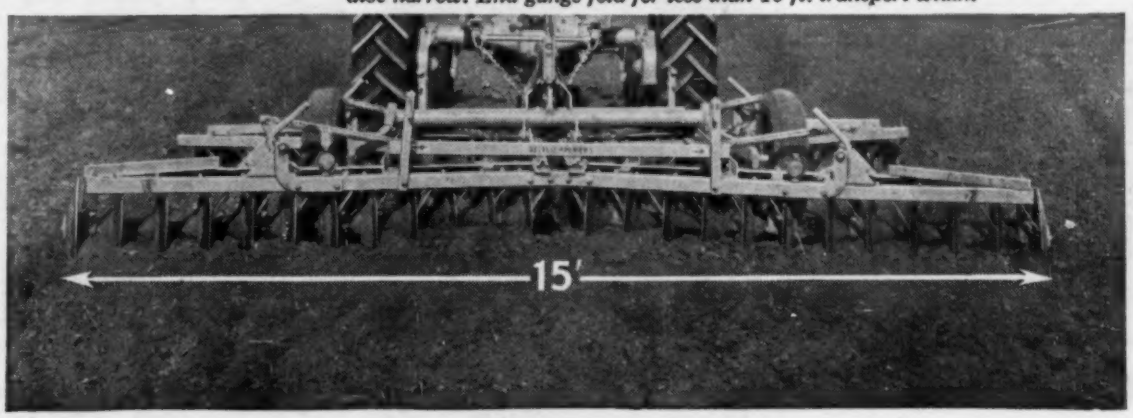

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IDEAL IN THE HOME, TOO, for chapped, cracked, chafed or dry skin, callouses, and all minor healing needs.

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Holds up to 4 Gals. of Solution

A remarkable device that saves time, cuts bacteria and improves milk grade. One solution sanitizes 50 cows. Flows without waste from tough plastic bag into soft, self-cleaning pad. One squeeze eliminates used solution—gravity instantly replaces it with a new supply. Moves with you from cow to cow by wire strung over gutter or carrier. See your dealer or write us for prices and literature.

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VINELAND, N. J.

"ONE HAND WASHES THE UDDER"

FEEDING

by N. N. Allen

Chore time can be cut

A little planning may materially cut feeding costs. Chore equipment is just as important as that for growing and harvesting of crops.

THERE has always been a lot of hard work connected with farming. From the time farming began, farmers have been looking for ways to make their work lighter. Machines have been developed and improved for tilling the soil, for planting the seed, and for harvesting the crops. With heavy tractors, field choppers, power unloading wagons, conveyors, and blowers, a crop goes in as hay or silage with a lot less muscle power and with a much smaller number of man hours than it used to take.

Although equipment ties up a lot of money, with labor costing upward of $1 per hour, the investment pays off. We can get along without the backaches that these jobs used to cause, too. Even so, there is a feeling of relief when the crop is in the silo or haymow.

Actually, the job isn't done; it is only half done, for every ton of feed that has been put in must be taken out and fed to the cows. In many cases, the second half of the job is still done by muscle power. Frequently you see silos that have been filled entirely by mechanical power which are emptied with a fork, and there are still cases where it is lugged to the cows in a basket.

We give a lot of thought to keeping down feed costs by shopping around for best buys, but often overlooking the fact that the labor of feeding is a part of the feed cost which may be reduced very substantially.

Chores take time, too . . .

Why is it that so much attention has been given to saving labor on the first half of the job and so little to the last? Perhaps it goes back to the idea that milking and feeding are just chores which do not count in the day's work. When it was only a matter of a couple of cows, and a few pigs and chickens to supply food for the family table, the time required each day was not very great, but the chores on a modern dairy are a different proposition.

If milking takes 2 hours per day, that adds up to 730 hours per year. I have just read a report that the working day on Wisconsin dairy farms averages a shade over 10 hours. Well, it takes 73 of those 10-hour days to come to 730 hours for each man working at the milking chore. And after centuries of doing it by hand, milking is pretty well mechanized.

Cleaning and bedding the barn and getting the manure out on the fields would add at least another 30 man days, and this is becoming more and more mechanized, too. Feeding and feed handling will take almost as much time as milking, and it is harder work, too. But, even though it is fairly heavy work, feeding has lagged most of all in substituting mechanical power for man power.

It is not hard to see that on the dairy farm chores are the main job, and the growing and harvesting of crops use much less time. It might look as if mechanization started at the wrong end. It is true that we are fighting against time on the cropping end, and this emphasizes the need for speeding it up. However, it still does not make sense to be so slow at putting power to work on the chores.

It helps to plan . . .

There is much more to time saving in feeding than just using expensive power equipment. It is almost unbelievable the amount of time and labor that can be saved by a little planning and thought in organizing the work.

A silage cart that is not big enough to make the full round of the barn may cost us many miles of needless travel in a year. Throwing down enough silage for both feedings at one time will save hours of climbing that is hard on aging hearts. Some are even feeding the full day's allowance at one feeding, which saves still more. There are almost endless ways of saving a few steps each day on each operation, which will add up to miles of tramping and hours of time saved in a year.

Farmers used to think little of walking to town when the roads got too bad. Now they can go swiftly and comfortably in cars or trucks over all-weather roads. Yet, in their barns where most of their work is done, they walk many needless miles.

Why not sit down and plan carefully how each job can be done with a few less steps? With little or no cash outlay for equipment, the time needed for the chores can be cut down enough to help a lot on the cost of producing milk. On the dairy farm, the daily chores are where most of the time and labor goes.

Good equipment helps . . .

Machinery is being developed to mechanize the chores, as well as the field work, but farmers have been inclined to give the "chore" machinery a low priority on their equipment purchases. Actually, a barn cleaner or a silo unloader will put in far more hours of operation in a year than will a combine or a mower, and will make a big saving in labor. Why shouldn't such equipment be given a much higher priority than it has rated in the past?

Mechanical equipment for taking over the work of handling and feeding the grain has come along more slowly, but it is on the way. Push button chores may sound fantastic, but where can this type of operation save more labor? While waiting for better equipment to come on the market, why not get the old noggin working on ways to save by planning the work better? And, who is better able to suggest equipment that is needed than the man in the barn?

MODERN DAIRY BARN on George Funk farm in southern Wisconsin is well ventilated and has cavity wall construction. This type wall gives added protection against cold entering and heat being lost.

Cavity walls are warmer

by Wm. L. Roper

CAVITY wall construction gives added protection against heat loss and condensation on the building walls. For dairy barns and other two-story buildings, it is customary to use 8-inch and 4-inch concrete block. Such walls then consist of two rows of block (one 8 inches and one 4 inches thick) separated by a 2-inch air space constructed as shown.

This type of wall construction can be made to have even more insulation value if the air space is filled with granular mineral insulation. On such walls, condensation will not form during extended periods of sub-zero temperatures.

When insulation is used, it is important that a vapor barrier be applied on the interior wall surfaces. The usual way to do this is to apply two coats of an asphalt base paint on the inside walls.

Construction procedure is to bring both rows of block up at the same time. Every fourth course, the 8-inch and 4-inch block rows are reversed to provide an overlap. Reinforcement is placed at each overlap for additional stability.

Avoid cutting blocks . . .

To avoid unnecessary block cutting, corners should be planned before starting.

A cavity wall for a single-story building, such as a milk house or poultry house, differs in that it is usually built of two rows of 4-inch block separated by a 2-inch air space. Since the block can't be overlapped as are the 8-inch and 4-inch block, tie bars are placed between the rows, spaced 1 to every 3 square feet of wall area. Around openings, tie bars are 3 feet apart and within 12 inches of the opening.

Stiff concrete best . . .

Almost any type of door or window can be used in a cavity wall. To cover the air space in the window opening, stiff concrete is best. The concrete is placed in the block cores and cavity, and held in place by form boards until it hardens. Wire mesh placed during wall construction prevents the concrete from dropping down inside wall.

The author is a field representative for the Portland Cement Association.

REINFORCEMENT is placed zigzag at each overlap for additional wall strength. Your lumber yard has the ¼-inch steel rods.

CONCRETE BLOCKS are overlapped every fourth course by reversing 8-inch and 4-inch rows. This, also, gives added strength.

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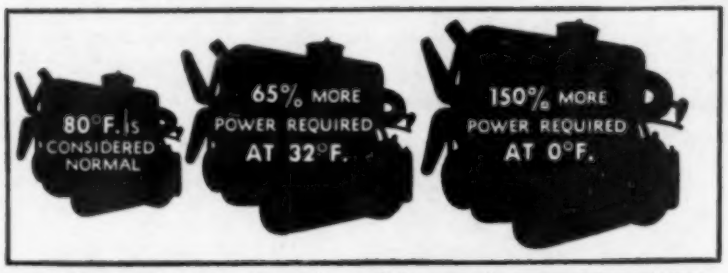


150 PER CENT more power is needed to crank your engine at zero than at 80 degrees. Winter starting needs a fully-charged battery.

Does your tractor start hard?

The battery may be the weak link in your ignition system. It may help to know how and why it works.

by Thomas E. Clague

HOW can you best get along with your tractor battery during cold weather? Or any battery, for that matter? The answer is to understand how and why it works, so you can take steps to help it "be its best" when the going gets tough.

Temperature is the big problem. At zero, a fully-charged battery has only 40 per cent of its cranking power. So, on a cold morning, your battery already has two strikes against it. In addition, the engine oil is stiff, making the engine harder to turn over. On top of all this, the spark to feed your ignition system must come from "what's left" in the battery after driving the starter. Is it surprising that you may have trouble starting, sometimes?

There are some things you can do. First, buy a battery that is generously powered for your size tractor.

Use a trickle charger . . .

Next, consider investing in a "trickle charger." Depending on rate of charge and the voltage of the battery, you can buy one for $10 or $15.

Advantages of the trickle charger are twofold. First, you increase the actual charge of the battery. This will improve the cranking power. Second, you keep the battery warmer. As the charger operates, it raises the temperature of the battery. And the warmer the battery, the greater the cranking power. At 32 degrees, a battery has 65 per cent of its cranking power available, as compared with only 40 per cent at zero.

However, don't count on using the charger to warm up your battery on a cold morning. It is difficult for the necessary chemical actions to take place when the temperature is below 25 degrees. Thus, you might think you are charging your battery, and not be doing anything. So don't expect the impossible of a trickle charger, or any other kind. They can't warm up a run-down battery on a zero morning.

The battery has to be warmed up to about 25 degrees first. However, if you connect the charger at the end of the day, while the battery is still warm from use of the tractor, it will keep warm during the cold night.

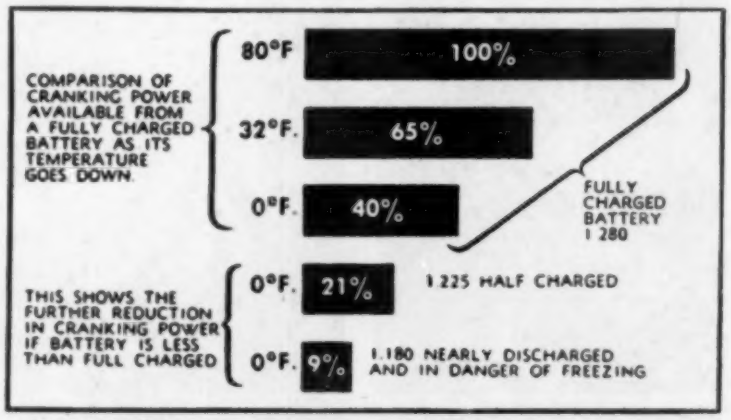
Take battery inside . . .

What can you do with a run-down battery on a zero morning? Take it inside, where it is warm. Do this right away, because a fully-discharged battery begins to freeze at 19 degrees. Even a half-charged battery begins to freeze at 16 degrees below zero. So, taking the battery inside to warm up can prevent a frozen battery, a burst case, and the purchase of a new battery.

You also can gain in improved cranking power, by warming the battery. The increased temperature might provide enough extra power to allow it to start the engine later.

Incidentally, you can improvise a "battery charger" by removing the generator belt and belting a small electric motor to your generator. This motor can then drive the generator and charge the battery, just as if the engine was running. The nuisance of setting up this rig might keep you from doing it all the time, but you might use it in a pinch.

There are some regular maintenance practices that will improve



YOUR BATTERY has less power available as the temperature goes down. What is left over after cranking has to feed the ignition system. Note reduction in power when battery is not fully-charged.

SORE TEATS
SCAB TEATS
BRUISED TEATS
OBSTRUCTIONS

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Dr. Naylor's Medicated Teat Dilators act 2 ways—Medically and Mechanically—to provide antiseptic protection, reduce inflammation and maintain free milk flow through the canal of hard milking teats. They provide gentle, non-irritating support to delicate lining of teat canal. Keep end of teat open in its natural shape to promote normal healing—natural milking.

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Keep the water at the proper level. This electrolyte is an acid solution which reacts chemically to take a charge and supply power when needed. When the water boils out of the acid, the level lowers and the acid gets stronger. The too strong acid is hard on the plates, and the part of the plates exposed to air soon become chemically inactive. If left dry very long, the dried out portion becomes useless, even when moistened again and you have lost a piece of your battery.

Distilled water for batteries is not nearly as important as years ago. Voltage regulators and step-down switches prevent overcharging and boiling off of the water. We add less water, and the possibility of mineral deposit trouble is less likely. If your battery is low on water, put in clean drinking water rather than run with low water while waiting for distilled water.

Clean off corrosion . . .

Keep connections clean and tight. Corrosion can cut down the effectiveness of the contact area between cables and terminals. This can reduce the power flow from battery to starter and ignition system. Clean off corrosion with a solution of baking soda. Put oil or grease on the clean connection, to help prevent more corrosion.

One word of caution: A battery can be a dangerous explosive when charging. Hyrogen gas forms during the chemical reaction of charging, and it burns readily. A flame or a spark can ignite it, and cause it to explode, possibly blasting open the battery case. You might wind up in the hospital with fire and acid burns. Don't disconnect a charger without first shutting it off. Even that small spark can cause the explosion.

You can always use an extra battery as a booster, in time of trouble. Be sure to connect positive terminals to positive, negative to negative. Remember, too, that at zero, two batteries have only 80 per cent of the cranking power of one that is warm.

Symbol of safety

When an item of dairy equipment carries the 3-A symbol, it indicates the equipment complies with 3-A Sanitary Standards for Dairy Equipment, and thus is acceptable to most sanitarians and health inspectors in the U. S.

The 3-A Sanitary Standards are evolved, voluntarily, by the 3-A Sanitary Standards Committees, on which are represented sanitarians, makers of equipment, and the dairy processors and milk producers who use the equipment. The 3-A Committees meet twice a year, and to date have approved 3-A Sanitary Standards for 15 types of dairy supplies and equipment, and have recommended sanitary methods to follow in certain processing techniques.

If a manufacturer of equipment believes that his product complies with an existing 3-A Sanitary Standard, he may apply to the 3-A Symbol Council for authorization to place the 3-A insignia on his finished product.

The 3-A Symbol is a potential "symbol of safety" for prospective purchasers of any of the types of dairy equipment now covered by 3-A Sanitary Standards. For further information, interested persons may write the headquarters of their national dairy industry trade associations, or directly to the 3-A Symbol Council which has its staff headquarters at 2617 Hartzell Avenue, Evanston, Ill.

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the lowest line of ice bank coolers in the industry

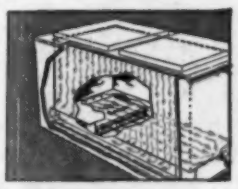
JAMESWAY "trim-line" styling gives milk handling a lighthearted lift with a new low 34" height. It's another bonus-extra added to these exclusive features:

- **Double Premium Cooling** — delivers 38° cooling in minutes. Assures low blend temperatures, never gives bacteria a chance.
- **2-Way Temp Barrier** — cold in, heat out! Perfectly cooled milk every day, any day. Bonded fiberglas, styrofoam and aluminum Temp Barrier actually holds milk 4 days at 38° with power off.

And you get a host of other Jamesway extras — one-piece fiberglas cabinet (stronger than steel); 18-8 stainless steel frame — no rust or corrosion; rounded corners for thorough cleaning; remote or built-in control. 150, 200, 250, 300, 400, 500 gallon units. Complies with all 3-A regulations.

For complete details and information on Jamesway's easy ownership plan see your Jamesway dealer. For folder write: James Mfg. Co., Dept. HD-18, c/o you nearest division office. Ft. Atkinson, Wis., Lancaster, Pa., Los Angeles 63, Calif.

All of the water, over all of the ice, all of the time — exclusive Jamesway flow pattern.



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Sani-Kool's 2-way Temp Barrier keeps fiberglas exterior completely dry. No sweating or spotting. A swish of a cloth and it's inspection-clean.

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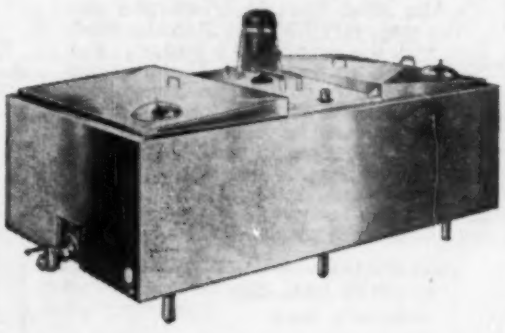

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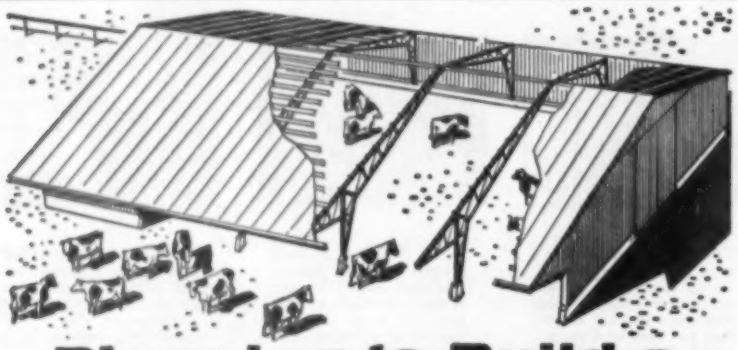

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RED CEDAR SHINGLES are extremely durable; insure protection against storms and heavy winds; minute cells contain preservatives.

WOOD SHINGLES for dairy buildings

You should know grades and sizes, their application, exposures, shingle spacing, proper nails, metal valleys, flashings.

by John A. Pence

THE current practices of application or construction methods of wood shingles are a result of many years of experience.

Wood shingle exposures, or that portion of the butt or thick end exposed to the weather, is dependent upon the length of the shingle and the slope or pitch of the roof. On roofs of one-quarter pitch or steeper, a 16-inch shingle should be exposed not over 5 inches to the weather. Likewise, 18-inch and 24-inch shingles are applied at exposures of 5½ and 7½ inches, respectively. These exposures will provide three full layers of wood at every point on the roof.

Where the pitch is less than one-quarter, the above listed exposures are reduced in each instance by at least 1½ inches.

There are four principal grades, of which No. 1 shingles are 100 per cent heartwood, 100 per cent clear, 100 per cent edge grain, and are free from defects. No. 2 western red cedar shingles are well manufactured and produced from the same wood as the No. 1 grade. This grade permits certain tolerances with respect to sapwood, flat grain, and other minor defective characteristics. No. 3 and 4 shingles represent lesser grades and are used chiefly for temporary and secondary farm roof construction.

Spacing is important . . .

The spacing of wood shingles in each running course is of extreme importance. The shingles should be applied at least ¼-inch apart, allowing for the possible expansion and contraction during alternate extremes of dry and wet weather. This spacing between shingles is referred to as a joint.

The joints, or ¼-inch spaces in alternate layers or courses, should not lie within 1½ inches of each other. The starter course at the eave line should be at least double coursed; these should extend an inch beyond the eave line.

The correct type of nail is of great importance as it alone fastens the shingle in position. A hot-dipped, zinc-coated or other highly rust-resistant type is recommended. Each shingle should be applied using **only** two nails. Each nail is applied at not more than ¾ inch from the edge and should be hidden so that the next course or row of shingles will cover it by at least 1 to 1½ inches.

It is further recommended that each nail be driven without producing hammer mark impressions on the shingle. Shingles of 12 inches or wider should be split in half before application.

Use good flashing material . .

Much, too, can be said of metal valley and flashing materials. Galvanized iron (24 or 26 gauge), copper, and tin flashings are recommended. The valley sheets, center-crimped, should extend out from each side of the crimped or center line of the valley for a distance of 10 inches. The open portion of the valley is normally 4 inches wide.

Chimney flashings are inserted at least 8 inches under the adjacent shingles and counter flashing is recommended on the upper side when the chimney is located on a roof slope.

It is recommended that the roof ridge line of the farm structures be protected by the installation of wood or metal ridge roll. However, 5- or 6-inch-width dimension wood shingles may be used where a Boston-type ridge or hip is desirable.

Now, a word with respect to over-roofing. This term applies to wood

shingles applied over old roofs. The old shingles must first be removed from 3 to 4 inches from the eave line and gable edges. These narrow spaces are then covered with narrow strips of lumber. Bevel siding should be laid along the ridges, thin edge down so as to provide suitable nailing support. The old valleys should be filled with strips of lumber and new valley metal sheets fastened in place. Again, the nails should be highly rust-resistant and of recommended size.

It is well to point out that very little, if any, maintenance is required during the life of the wood shingle covering. If any shingle does become damaged, it can easily be replaced.

The western red cedar grows abundantly and its value as a farm roofing material is borne within its tiny cells and wood tissue. Indeed, nature provided many useful characteristics which, in part, are:

1. The extreme durability to all kinds of weather. The minute cells contain natural wood preservatives.

2. The low-expansion-contraction ratio with moisture changes.

3. The straight, smooth grain means it can be split, sawn, or otherwise worked with complete ease, requiring the simplest tools.

4. The high insulation value.

5. The rigid characteristics insure protection against storms and heavy winds. A wind velocity test of 136 miles per hour failed to affect in any way a roof section of No. 1 Certigrade 16-inch shingles applied at the recommended 5-inch exposure.

6. The increased absolute strength provided to the roof because it is a rigid material.

7. The high fire resistance provided. Less than 2 per cent of all fire losses can be attributed to sparks on roofs of all types. Many state and municipal fire codes have been and are being adjusted to permit again the use of wood shingles as a roofing material.

8. The appearance, enhanced by the mellow color tones, accentuated by the tapered features, has often been imitated but never quite duplicated.

In conclusion, much can be said relative to the life expectancy of a wood shingle roof. An analysis of performance data, including personal investigations, throughout our vast farm areas attest to their extreme durability. It is not unusual to find such roofs which have withstood the elements for upwards of 50 years or more.

From the standpoint of initial cost, life expectancy, minimum upkeep, and superior insulating qualities, it appears obvious that wood shingles offer many desirable advantages as a roofing material for farm structures.

Joe: "That's not a bad looking car."

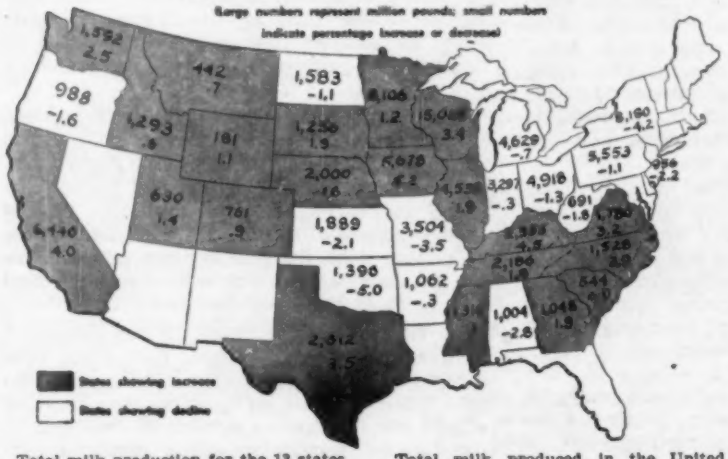
Jim: "I call it the never never car."

Joe: "Why?"

Jim: "With it I've never had an accident, breakdown, flat, or never slid down a hill."

Joe: "Say, that's wonderful."

Jim: "And I never can get it started."


MILK PRODUCTION ON FARMS JANUARY-OCTOBER 1957 COMPARED WITH 1956
Large numbers represent million pounds; small numbers indicate percentage increase or decrease
States showing increase
States showing decline

Total milk production for the 13 states whose monthly data was unavailable was 7,863,000 pounds, an increase of 2.4 per cent over the same period in 1956.

Total milk produced in the United States during the first 10 months of 1957 was 108,814,000 pounds, an increase of 1.0 per cent over 1956.

Milk production by states varies

THE December issue of the "Dairy Situation" reveals some interesting facts concerning the change in milk production among selected states during the first 10 months of 1957. While production for the United States increased 1 per cent (1 billion pounds) over a year earlier, 14 of the 35 states for which monthly data are available show a decrease.

One of the biggest drops was recorded in New York, with 356 millions pounds less (4.2 per cent). Oklahoma's output dropped 5 per cent, equivalent to 74 million pounds; and in Missouri the decline was 126 million pounds (3.5 per cent).

Wisconsin showed an actual gain of nearly 500 million pounds, although this is only a 3.4 per cent increase. States showing larger percentage increases include: South Carolina, 6.0; Iowa, 5.2; Kentucky, 4.5; California, 4.0; and North Carolina, 3.9.

Production of milk per cow has increased each year since 1944. In fact, over the 33-year period for which records are available, the only significant decline in production per cow was during the depression and drought period of the 1930's.

The lowest annual rate of production was 4,033 pounds per cow in 1934. By 1941 it reached 4,738; 5,000 in 1947 and 6,000 in 1956. The average for 1957 will be about 6,150 pounds per cow.

Total output for the year may total 127 billion pounds, compared with the record 125.7 billion produced in 1956. All present indications point to continued high milk production well into 1958 and probably the sixth consecutive record high, unless widespread drought limits forage and pasture output.

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EDITORIAL COMMENT

LESS BUTTER — MORE GUNS

FOLLOWING the launching of Russia's space satellite, "Sputnik," a highly-placed government official sounded a keynote of "less butter and more guns," for the United States. Butter, of course, was used as a symbol of domestic contentment.

Throughout November and December, newspapers, magazines, and government officials indicated their support of increased emphasis on preparedness for defense. Belt-tightening on non-defense programs will be much more popular than it was before "Sputnik." Recent failures to get the U. S. satellite, "Vanguard," into space adds weight to less butter-more guns proponents.

All this serves to emphasize what has been oft-repeated in these columns. Any farm program which must depend upon annual appropriations of Congress is a weak peg upon which to hang your hat. This goes for the present price support program, as well as for direct payments.

We should have ample warning that the farm program of the future, insofar as price stability is concerned, must be largely free of dependence upon Congressional appropriations. While farm people in the past have been politically strong, their position is ever weakening. At present, from 12 to 13 per cent of the population is on our farms. By 1975, farmers may make up only 7 per cent of the population. How much political power can be exercised to support costly farm programs whether they be the present type or direct payments?

Obviously, farmers themselves, through their own stabilization agencies, should control and dispose of surpluses, balance supply and demand, and otherwise administer the farm program. All this, of course, should be done with the government's right to step in and exercise guidance and jurisdiction in the public interest.

It is time farm and Congressional leaders began to read the handwriting on the wall. The "less butter — more guns" warning should be enough to bring greater realization that the proposed Dairy Stabilization Program approved by the National Milk Producers Federation and The National Grange is a step in tune with the times and is in the best interests of dairy farmers now and in the future.

DO DEALERS WELCOME STRIKES?

WE HAVE long believed that milk dealers do not like strikes by dairy farmers. That has seemed to us to be a sensible and logical observation.

In recent months, we have begun to question that conclusion. In many markets, farmers have attempted to bargain with dealers to secure an increase in price. In most of the cases, the requested increase was reasonable, considering increased costs of production and the increased costs of all other types which are well known to the dealers. While a reluctance on the part of the dealers is perfectly understandable, too often it has been necessary to resort to a threat of strike, or actually carry out a strike, to bring about the increase in price. Under circumstances, many dealers have quickly acceded and granted the increase, passing on the increased cost of the milk to the consumer.

Apparently all these dealers were looking for was a good, well-publicized reason for increasing the retail price. The newspaper headlines, heralding the threat of a strike, or the existence of a strike, were all the justification they needed for making the change.

It is regrettable that a well-documented case for an adjustment in the farm price of milk does not bring about prompt dealer support. Force, or the threat of force, is a poor way to do business. Until such time as dealers approach the price problem from a more logical basis, however, they will invite strikes.

A CASE OF BROKEN FAITH

ON THIS page, December 10, we spoke out against the scuttling of the accelerated brucellosis eradication program. Readers will recall that staff officers in the Department of Agriculture are urging a drastic cutback in funds available for the completion of the campaign. We would emphasize that there is another consideration which may be of far greater importance than the brucellosis program.

It has long been the policy of the federal government to combat disease, insect, and other serious agricultural problems in cooperation with the respective state departments of agriculture. This teamwork has been healthy and rewarding.

The present federal administration has gone on record repeatedly in favor of this approach. Within the past three or four years, great gains have been made in co-ordinating state and federal activity so as to prevent duplication and step-up efficiency of efforts. Perhaps the greatest progress of all has been in the field of livestock disease control.

The move to quickly retreat on brucellosis is a staggering blow to those state officials and livestock industry leaders who have given wholeheartedly of their time and talent to the furtherance of the well co-ordinated attack on brucellosis. The proposed retreat cannot help but shake the confidence of everyone in the good faith of the U. S. Department of Agriculture.

With what degree of assurance can the states and livestock industry leaders enter into future agreements with the Department? At what hour can they expect the U.S.D.A. to pull the rug out from under them? How often will one horse in the three-man team of federal government, state government, and livestock industry begin bucking and run off in the opposite direction?

This problem is serious. It's time U.S.D.A. top staff officers realistically appraise the possible tragic consequences of their ill-advised budget recommendation.

In 1905, W. D. Hoard said:

It is hard for the sons of men to learn the lessons of wisdom from the experience of others. Hence we see every generation practicing the mistakes that have been handed down to them. Nowhere is this so apparent as on the farm.

In proportion as we keep our minds bright and alert to the problems of our business will we succeed. Every farmer knows how difficult it is to do good work with a rusty plow. It is just as difficult to do profitable work with a rusty mind. Every dairy farmer is helping himself more than he can conceive of, if he does everything in his power to keep his mind, the most important tool in his workshop, bright, and not rusty.

PROGRAM PROSPECTS— NEXT ISSUE

AS THIS issue goes to press, we are leaving for Washington, D. C., to spend a week meeting with representatives of the National Milk Producers Federation, the National Grange, the National Farmers Union, and the American Farm Bureau Federation. It is our hope that material headway can be made in an agreement on a new dairy program.

Under the circumstances, we are foregoing commentary on the price support issue until these conferences have been completed and, in addition, we have had an opportunity to discuss alternative dairy programs with leaders in Congress.

Your next issue will bring you a report of our findings and the prospects of heading off the sharp drop in milk and cream prices April 1.

AUTOS FOR BUTTER

WHEN Congressman Harvey of Indiana spoke to a group at the recent annual convention of the National Milk Producers Federation, he told an interesting story which illustrates the problems inherent in international trade.

According to the Congressman, a delegation of men from a foreign dairy nation came to the United States with the well-publicized intention of buying automobiles and trucks. Arriving in Detroit, they indicated the size of their purchase of automotive equipment would be in very high figures. We can well imagine the enthusiasm with which this announcement was received by the automotive industry.

As the problem of financing was discussed, the foreign visitors stated that they were ready to pay for the automobiles and trucks with their surplus dairy products. In other words, our automotive equipment would go to the foreign country and their surplus butter and cheese would come to the United States.

It was the obvious intent of the foreign visitors to secure the backing of United States automobile manufacturers in breaking down restrictions to the entry of foreign dairy products. Since these products could be laid down here far below our domestic price, they would find a ready market.

The net result of all this, of course, would be that the federal government would simply have to buy up either the foreign butter and cheese or our own butter and cheese which the foreign products displaced in our market. If the government did not do so, the dairy prices in the United States would quickly drop to foreign market levels and farmers would be receiving from 80 cents to $1 per hundredweight less for their milk.

It's an interesting story which merely serves to illustrate the forces which prevail and which could result in our prices for milk and butterfat dropping to world market levels. Those levels, incidently, are founded on a wage scale far lower than ours. If our prices did not drop, it would simply mean that the United States government would be acting as a price support agency for the dairy products of the entire world.

Questions from Our Readers

How to waterproof tanks

Would you please tell us if carbonized non-fibrated coating would be all right to put inside a water tank for human consumption?
Iowa S. W.

I have been trying to get some information on the non-fibrated coating you have, but so far have not been able to get much information on the desirability of using for coating a water tank.

Apparently this material is an asphalt base. Usually, we do not recommend asphalt base materials for water tanks if the water is to be used for human or animal consumption. The asphalt materials frequently flavor water.

We usually recommend using metallic zinc in linseed oil as a rustproofing coating for the inside of metal tanks. This material has been used successfully by the Navy on water tanks in ships. For concrete tanks, a coating of thin cement brushed on is usually best.

Wooden tanks are very difficult to waterproof successfully. We usually recommend replacement for wooden tanks once they begin to leak.

In applying any coating, be sure the tank walls are clean and free from all rust, oil, or dirt. Also, the tank should be completely dry, if you are to get a good bond between the wall and the coating. Allow plenty of time for the coating to harden before putting water into the tank. This will require several days.

—G. P. BARRINGTON

What size plow?

I would like some information on plows. Quite often someone makes the statement that 4-14-inch plows pull easier than a 3-16-inch plow. Is this correct?
Iowa M. K.

We very definitely feel that the four bottoms cutting 14 inches will pull easier. Although we have no drawbar dynamometer studies, the experience in our rather large operation indicates that this is true and also that the operators are much happier with the 14-inch bottoms.

The draft of plows is normally given in pounds per square inch of furrow section. Sandy soils are usually rated at about 5 pounds per square inch of furrow section and clay soils, 8 to 11 pounds per square inch of furrow section.

—DALE O. HULL

Moisture on ceiling

We have a round roof building 36 x 80 feet which we built from rafters we made ourselves. We use this for loose-housing our dairy herd but have a lot of trouble with frost building up on the underside of the roof and then melting when the weather warms up. There is a door 16-feet wide in one side of the building and we keep this open all winter.

Can you tell us what to do to get rid of the moisture?
Indiana J. O.

There is not enough air movement in and out of the building to carry away the moisture given off by the animals. The warm, humid air which they exhale rises up to the roof where it is cooled and gives up its moisture. This causes the frost.

A means must be provided which will allow this air to get out of the building before condensation takes place. This can be done by making a large louver in each end of the building.

A good rule to follow is to measure down about four feet from the peak of the roof and make a louver in the entire space above this point and out to the roof.

—D. W. BATES

Burns valves in motor

Find enclosed a sample of carbon that I scraped off the top of piston and head from a V-8 motor. We have been having trouble with burning valves and losing compression. The valves that cause trouble are the intake valves. We also have this truck on propane fuel. Is this an oil carbon or what?
Iowa R. H. M.

The carbon appears to be normal combustion residue from an engine which is burning LP gas. As you well know, propane has a very high octane number and, for that reason, I would suggest that we cross off pre-ignition as a cause of this problem. However, you do not get combustion so complete that fuel soot does not appear in the combustion chamber. When engines are burning ethyl gasoline, the red colors both from fuel and oil have been known to discolor combustion chamber deposits.

One of the reasons that exhaust valves burn is the fact that they are operating at a temperature in excess of 1,350 degrees. If, by engine adjustment, the temperatures of the valves can be reduced, the trouble very often disappears. May I make these suggestions:

First, using an exhaust gas analyzer especially designed for LP gas, check the air-fuel mixture ratio. If your air-fuel mixture is too lean, valve burning will very often result due to late or slow combustion.

Second, I would suggest that a lubricator be provided so that extra oil would be going to the exhaust and intake valve stems since propane is an inherently dry fuel.

We have to consider certain other factors with a truck. It may be that this operator is overloading the unit. This is a different matter for a dealer to handle since the customer operates the equipment away from the area where the dealer might likely see it. In addition, the hard water deposits in the head may be slowing down the cooling rate in the head and localized overheating has occurred. If this is the case, usually the same valve will burn each time. It will, in addition, burn on the same side.

Whenever valve burning occurs, it is usually the sensible thing to replace any magnetic type valves with ones made of stainless steel. Exhaust valve guides should be checked and changed and, by all means, check exhaust valve springs for tension. —DALE O. HULL

Sudan grass seed

I would like to plant some extra sudan grass for seed this year. Would you advise me on how I should do this? How much should I plant?
Illinois A. L. S.

Sudan grass is best grown in rows in a manner similar to that for corn. Such rows may be from 38 to 42 inches apart. About 3 to 5 pounds of seed are planted per acre with the use of special planting plates on the corn planter.

Seeding should be done at a depth of about ½ of an inch and the soil kept moderately firm. Nitrogen is the fertilizer element to which Sudan grass responds most quickly and fertility should be moderate for a good seed crop. In general, one might fertilize as for a fairly good, though not maximum, crop of corn.

Sudan grass starts slowly in the spring and does not compete well with weeds. It should be kept well cultivated. After it is 12 to 15 inches tall, it grows rapidly and will tend to compete with weeds much as does corn. In later growth stages it may be sprayed with 2,4-D, as necessary, with drop nozzles.

One of the problems in growing Sudan grass seed is suitable maturity. While it is best planted in late May or early June when the soil is warm, it may not have seed sufficiently mature before frost. This has been a general hazard in areas north of you. Under your conditions, however, you might be able to get a reasonably good seed crop matured before frost.

Since Sudan grass does not ripen before frost and does not dry out well, it is necessary to allow it to dry for some time after freezing. When the leaves are fairly brittle, and before shattering becomes excessive, it is best cut with a binder and shocked. When it is more thoroughly dry, it can then be threshed.

In general, most of the Sudan grass in northern areas where the crop has been frozen is threshed with a stationary separator. This is, of course, a somewhat slow process and tends to make the growth of Sudan grass for seed unpopular in our northern, moist areas.

If the seed is well dried at harvest time, it may be stored in bags without concern. If, however, it is carrying considerable moisture when threshed, it should not be placed in large bulk bins, since the germination will be damaged. The usual type of grain-cleaning machinery can be adapted in handling of the Sudan grass. Usually the seed is fairly clean though occasional weed seeds may tend to be persistent in the harvested crop.

—D. C. SMITH

Strong enough posts?

Recently we remodeled our barn and the contractor used 3-inch pipe, 7½ feet long for posts to support the hay mow floor. The barn is 36 feet wide and 60 feet long. The posts are 12 feet apart in each direction.

Do you think the posts are strong enough? They are not filled with concrete.
Ohio F. A. H.

A standard 3-inch pipe, 7½ feet long when used as a post will support 30,300 pounds. Since each post supports an area of 144 square feet, a floor load of over 200 pounds per square foot could be applied if the joists and girders are sufficiently strong.

If the 3-inch diameter you refer to is outside measurement, it is likely that the nominal diameter of the pipe is 2½ inches. Such a pipe will support 21,100 pounds.

—D. W. BATES

Cost of drying hay

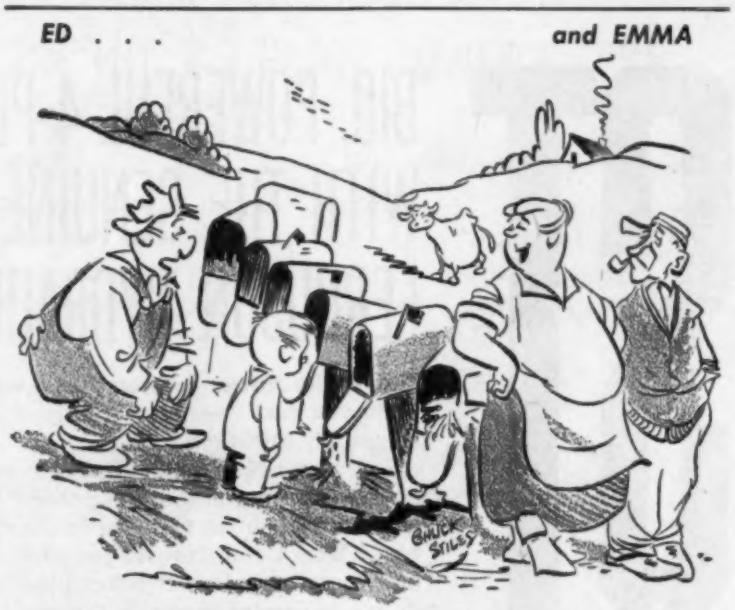
We have given a lot of thought to putting a duct system in our hay mow and using a fan and electric motor to dry hay. One of the things we are wondering about is how much it will increase our electricity bill to dry 50 or 60 tons of hay.
Wisconsin D. E. R.

How much it will increase your electricity bill will depend upon your electric rate and the moisture content of the hay when it is put in the mow. Weather conditions will also effect the rate of drying.

In a number of tests conducted at the University of Minnesota the cost per ton to dry hay using unheated air ranged from 85 cents to $1.85.

An average figure for a farm operation where the moisture content of the hay is 35 to 40 per cent would be $1 to $1.25 per ton.

—D. W. BATES



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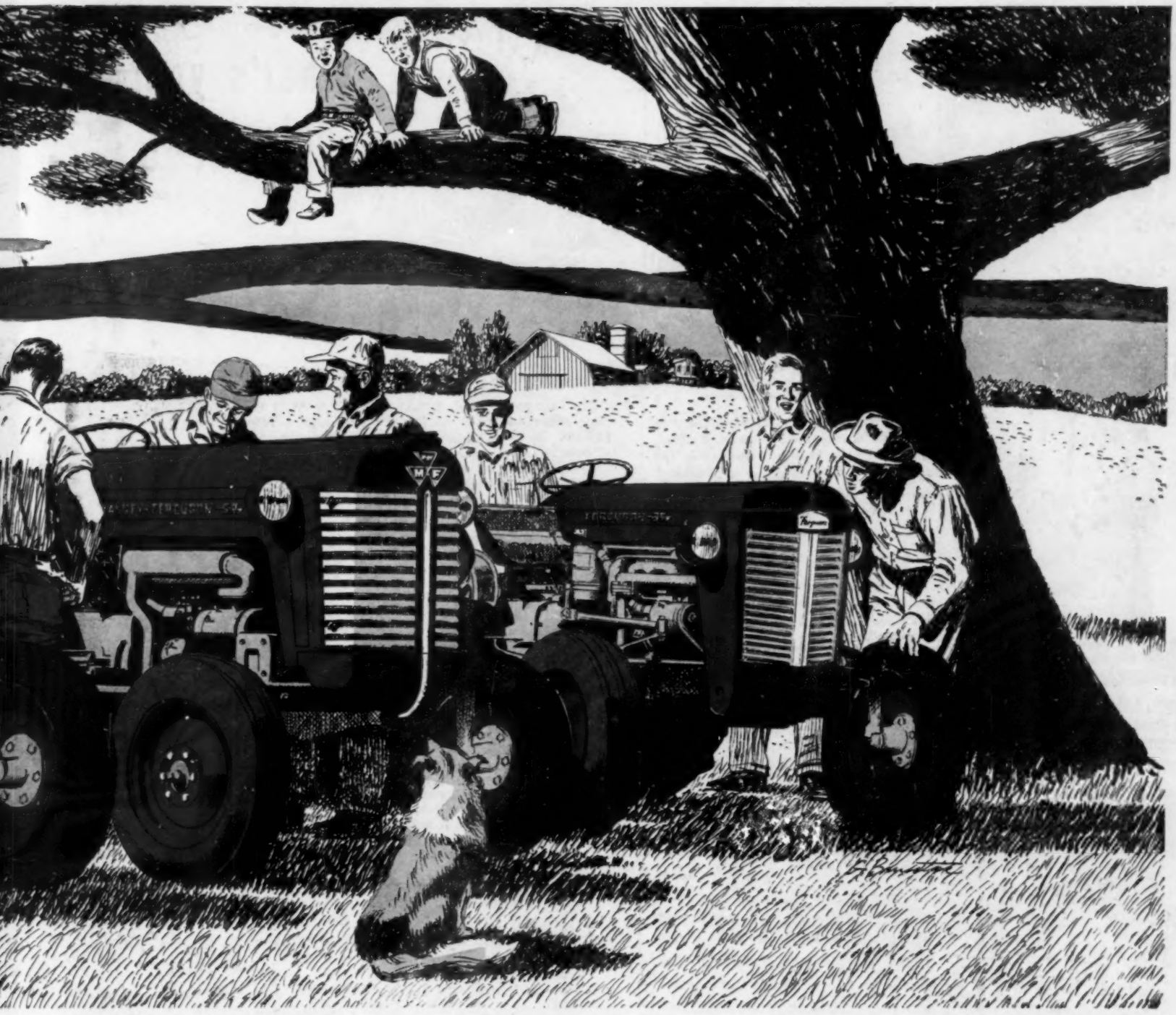

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FIELD-TESTED SINCE 1922

What's your dairy I.Q.?

by Charles E. French
Agricultural Economist
Purdue University

The consumer and government play important roles in the dairy picture. To keep up-to-date on the effects of both is no easy task. Check yourself on these 12 questions and turn to page 96 to see how the experts grade your knowledge of the subject.

1. How many pounds of fluid milk and cream did the average American consume last year?
- ___(a) 356
- ___(b) 223
- ___(c) 491
- ___(d) 707

2. How did oleomargarine consumption compare with butter consumption last year?
- ___(a) margarine 20 per cent more
- ___(b) margarine slightly more
- ___(c) butter 20 per cent more
- ___(d) butter slightly more

3. Which of these countries has the highest per capita consumption of dairy products (on a milk equivalent basis)?
- ___(a) United States
- ___(b) Ireland
- ___(c) Italy
- ___(d) Netherlands

4. In 1956, what percentage of the milk produced was bought by the government for price support?
- ___(a) 14 per cent
- ___(b) 21 per cent
- ___(c) 1 per cent
- ___(d) 4 per cent

5. "Mellorine," vegetable fat "ice cream" substitute, makes up what part of our total frozen dessert consumption?
- ___(a) 1 per cent
- ___(b) 4 per cent
- ___(c) 10 per cent
- ___(d) 30 per cent

6. Which prices are set by a federal order?
- ___(a) minimum producer price only
- ___(b) minimum producer and retail prices
- ___(c) minimum and maximum producer prices
- ___(d) minimum and maximum producer and retail prices

7. Manufacturing milk prices are supported at what percentage of parity for this marketing year (April 1957 to March 1958)?
- ___(a) 83 per cent
- ___(b) 75 per cent
- ___(c) 90 per cent
- ___(d) 100 per cent

8. What part of the consumer's dollar for butter goes to farmer?
- ___(a) 17 cents
- ___(b) 31 cents
- ___(c) 50 cents
- ___(d) 65 cents

9. Who must vote for a federal order before it can come into a market?
- ___(a) producers
- ___(b) producers and handlers
- ___(c) handlers
- ___(d) producers, handlers, and consumers

10. Which of these commodities has had the largest percentage increases in consumption per person since World War II?
- ___(a) milk
- ___(b) chicken
- ___(c) butter
- ___(d) frozen vegetables

11. Fluid milk health ordinances are usually administered by what part of the government?
- ___(a) city
- ___(b) state
- ___(c) federal
- ___(d) county

12. What part of the consumer's dollar spent for meals eaten at home goes to dairy products?
- ___(a) 8 cents
- ___(b) 31 cents
- ___(c) 17 cents
- ___(d) 23 cents

Guernsey scholarship winners

The American Guernsey Cattle Club has announced the three winners of the 1957 National Guernsey Training Program scholarships. They are Donald Otterness, Cannon Falls, Minn., a dairy husbandry major at the University of Minnesota; Bruce Bean, Warner, N. H., agricultural teaching major at the University of New Hampshire; and David Smith, dairy husbandry major at North Carolina State College.

The three were selected from 54 applicants from 22 colleges. They have participated in the Guernsey Training Program for from two to three summers and will receive $300 scholarships to be applied toward their college expenses this year.

Part of the Guernsey scholarship program includes summer training on registered Guernsey farms. During the past summer Otterness worked at Rolling Acres Farm, Elgin, Ill.; Bean at Langmore Farm, Troy, N. Y.; and Smith at Golden Harvest Farm, Bridgewater, Conn.

During the 10 years that this scholarship program has operated, 251 young men have received on-the-farm training.

To remove paint or enamel from glass, apply nail polish remover or scrape with a safety razor blade.

Milk-per-man is our profit yardstick

(Continued from page 65)

before it is time to breed her.

Some heifers are bred to freshen during July to help during slack time when majority of fall fresheners are dry. Have more time to work with them and get them started right. Pregnancy examination is also helpful to keep cows calving regularly.

Casler: I breed most cows the first heat period after 60 days. I have cows examined for pregnancy about two months after I think they have been bred. If a cow comes in heat after she has been bred three times, I have her examined also. I like to have cows calve every 11 to 12 months, depending on season they first freshen. In May and June, and November to February I generally pasture bull with cows.

Flower: We make a uterine examination the second day after freshening. We do not breed back until 60 days. Any cow that does not conceive the first service is examined and treated.

Robb: We have our own herd sire for natural service. We breed our heifers to freshen after 2 years of age, depending upon what time of year the majority are born. We are in a base-surplus milk market and plan an even flow of milk the year round, with heaviest flow during base months.

Another factor is the balance of elements in the soil that produces their feed, which I believe helps to cut down on breeding difficulties.

A third factor, our cows go out once a day in wintertime for exercise and fresh air.

Describe your record system and how it is used to help guide you in your management decisions throughout the year.

Pancratz: The herd has always been on D.H.I.A. and H.I.R. testing. Keep all breeding dates and freshening dates. Keep an accurate account of all expenses and income.

Hostetler: D.H.I.A. testing records help in culling cows that drop below 10,000 pounds milk and 375 pounds fat.

Breeding records help select best replacement heifers.

Farm accounts help in preparing income taxes and show you where you should strive for improvement the next year.

I also subscribe to a farm management service, which keeps one up with the latest news and trends, and attend adult farmers' classes taught by vo-ag teacher each week during winter months.

Teague: Dairy Herd Improvement Association records are perhaps most helpful to me. If these records are analyzed and used to their fullest, they can give a dairyman a world of information. They are useful to me in feeding, culling, breeding, herd replacement, identification, and in more intelligently making many decisions.

Using artificial breeding, my records are even more necessary. I use standard chart posted conveniently in barn which tells cow, heat period, breeding date, service sire, number of repeats, previous calving, calving date, space for valuable remarks, pregnancy diagnosis date or any abnormalities.

Casler: Use D.H.I.A. records a lot. Breeding dates, calving dates, etc. are put on calendar in barn and transferred to D.H.I.A. book when tester comes once a month. Also use farm accounts and inventory—County Account Club.

Flower: We test in D.H.I.A. and H.I.R. Every bull used eventually has either U.S.D.A. or H.I.R. proof. Breeding records are kept in barn books and transferred each month into the testing books where all information about each cow is kept. We have a complete bookkeeping system. All bills are paid by check; all income is listed on deposit slips. At the end of each month everything is posted in our books in proper columns. Monthly and year-to-date summaries are made each month. All records are instantly available.

Robb: We are on H.I.R. and D.H.I.A. The H.I.R. "Green Book" is of much help in keeping up with many other herds breeding the kind of animals that will look well and produce, always keeping in mind that the milk check pays the bills. We weigh our milk twice a day to know just how much each cow is milking. Also keep breeding data on milk sheets.

Do you have a culling guide which you follow in your herd? What is it?

Pancratz: Yes. Strictly production basis.

Hostetler: A combination of production (10,000 pounds milk, 375 pounds fat), age of cows, regularity of conception, damaged udders, etc.

Teague: Yes. Up to the present time I have been trying to build up numbers and have had a minimum requirement of 300 pounds butterfat. Of course, for heifers or young cows that have some difficulties, that may need to be taken into consideration and given another chance. There are other factors as well as production taken into consideration, but production is main guide.

Casler: No. I would rather sell a mean or disagreeable milker that was above average than a young low producer that is a good breeder and healthy. I think I make more by milking an average priced cow and selling the nice looking for good cash.

Flower: We cull for health only. It has been years since we have had a poor producing first-calf heifer (under 350 pounds fat). The culling we do is done for old age, udder health, breeding trouble, etc.

Robb: Nothing specific. We go by production and family lines combined.

What is your barn chore and milking routine? How long does it take you to milk the herd?

Pancratz: Mornings I feed grain and milk the cows, while my helper feeds silage and hay and does the other chores. Evenings all feeding and caring for the cattle are done before milking time. I milk one evening, my helper milks the next, alternating every other evening. This gives each of us every other evening off. Milking 30 cows it takes about 1½ hours. One man runs two units and all cows are stripped.

Hostetler: I feed silage and bed loafing pen before milking. Sanitize pipeline and milking units while feeding young heifers. Put units together and start to milk. I milk from 42 to 45 cows in 90 minutes. Then I wash up, clean milking parlor, and feed cows hay.

Teague: We all work on all farm jobs, doing farm field work between milking times. In busy season two men milk and feed in evenings and other one continues in field.

At 4:00 p.m. promptly we start milking. Use glass pipeline milker in 15-stanchion barn. Use four units; milk in shifts, changing cows on one side while milking continues

(Continued on next page)

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No obligation.

HOARD'S DAIRYMAN

Fort Atkinson, Wis.

(Continued from preceding page)

on the other. Each cow comes in on same shift to the same stanchion. Milk 60 cows in 90 minutes.

Sometimes in slack seasons third person changes cows, feeds calves, and does other chores around farm. Milking is considered one of our main operations and takes precedence over other things when it's time to milk.

In winter, feed silage twice a day in feed bunks outside after milking; and feed hay three times per day in feed racks on both sides of hay barn.

Casler: Barn stabling routine: 5:00 a.m. feed cows silage and grain, scrape down, get ready to milk, sweep up to cows, milk, wash milking utensils, feed hay which is left over from the previous day.

Breakfast about 7:45 to 8:00 a.m. After breakfast haul milk and stop at other barn to push hay to heifers. Clean barn, let cows out for exercise, bed, feed hay. Generally done by 11:00 to 11:30 a.m.

Rest of day do odd chores, repair machinery, clean calf pen and heifers, clean cows, go to town or some meeting, or just take it easy.

Start chores 3:30 to 4:30 depending what I want to do in evening. Eat supper about 5:30; milk and other work until I get done 7:30 to 9:30. Average milking time about 30 to 35 cows per hour if alone. (If I want to go away, this routine is varied somewhat.)

Flower: The herdsman and his helper are at the barn at 2:30 a.m. and are milking by 3:00. They usually are through milking and have calves fed by 6:30. Take time out for breakfast, return to barn to wash equipment and clean up barn, breed cows, etc. and are all through about 8:30. They return to the barn 2:30 p.m. and are through by 6:30 p.m. We have 120 to 130 cows.

Robb: First, feed silage and grain. Second, milk (wash the udders a minute before putting on milker, milk each cow within three minutes, strip, and weigh milk). Last, feed hay.

Do you ever get a rest? How about a vacation? How do you arrange it?

Pancratz: One of us takes off Saturday the other Sunday, alternating each week. We each take a week's vacation each year. The work is arranged so that one person can do the work when necessary.

Hostetler: We have been taking a week or 10 days off the past several years to attend the National Milk Producers Federation convention and enjoy the travel to and from it. A brother did the milking for me and a neighbor helped with other chores.

Teague: With the hired help we alternate weekends off. Most vacations are used to attend various meetings and dairy events such as the 350th anniversary of the dairy industry at Jamestown, Va., last spring.

Since dairying is a seven-day-a-week job, we have tried to make it up to our children with a little more "vacation at home." With the money we would have spent traveling, I spent building a family swimming pool in our own yard. The time and expense has been most worth-while, considering the pleasure, excitement, and fun we have had right here at home. Even our friends seem to enjoy visiting us all the more, too.

Casler: I would like to go away for a weekend or so, but haven't missed a milking in about seven years until we went to the State Fair and got a neighbor to help my 12-year-old boy milk. If we go visiting or to a farm meeting, we milk early or late as the need arises. I like to milk and work with stock so hardly ever got tired or discouraged when doing it.

Flower: Each man gets every other Sunday off. One of the farm hands helps one of the dairymen each Sunday. Everyone, including myself, gets one to two weeks' vacation each winter. I leave the farm in charge of the herdsmen when we are away.

On the year-around basis we do not work more than 10 hours a day. The dairy workers get in more than 10 hours in summer and less than 10 hours in winter. They are off after morning chores till 2:30 p.m.

Robb: Being a two-man operation, we take alternate Sundays off. Arrangements are made for two-to-three-day vacations in slack seasons. **THE END**

HAY DRYING SYSTEMS is the subject of the next Round Table article. Six dairymen, having a total of 40 years' experience drying hay, will describe their systems in detail.

N. C. dairymen's conference

The 8th annual Dairymen's Conference will be held at North Carolina State College February 18-19.

Topics to be discussed include mastitis — causes and prevention; new methods for cleaning rubber parts and bulk milk tanks; and methods of feeding forage. In addition, roughage research findings will be discussed by North Carolina State College staff members.

Wisconsin conferences

The Annual University of Wisconsin Dairy Manufacturers' Conference and The Wisconsin Dairy Plant Fieldmen's Conference are scheduled to be held in Babcock hall at the University of Wisconsin, Madison, February 5, 6, and 7. Programs are available from K. G. Weckel, Babcock Hall, University of Wisconsin, Madison 6.

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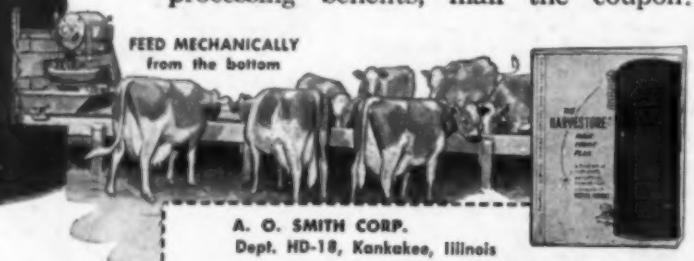

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Please send me the "Why Make Hay" and "Farm Profit Plan" booklet. I'm interested in increasing my profits through Vertical Farming.

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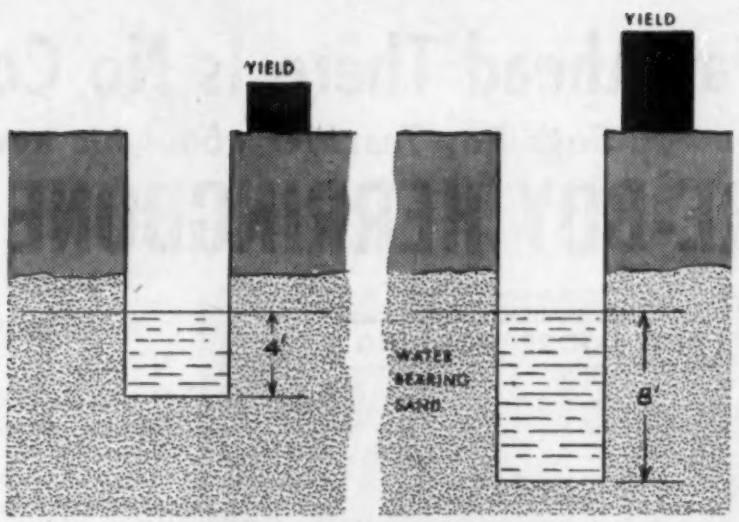
County ..... State .....

If your shallow well is going dry...

...increase depth by digging, or telescope smaller casing inside of larger one, or drive a well point.

by Fred Beckett



WELLS increased by four feet into water-bearing sand may, in many cases, more than double the water flow; it may even be quadrupled.

DOES your well produce all the water you need? If it doesn't, an increase in depth may solve your problem.

Under proper conditions, doubling the depth of water in a well will double the yield. Sometimes it will be increased to four times the original value.

Take a hypothetical case. A well that has four feet of water might have a maximum continuous yield of 100 gallons per hour. If it were extended four feet, the water would be eight feet deep. This would increase the maximum continuous yield to at least 200 gallons per hour and the gain could be as much as 400 gallons per hour.

Type to deepen . . .

Wells in sand or gravel formations are the ones most likely to benefit from increased depth. Water-bearing formations are often called aquifers. The only limitation on increasing the depth of a well in a sand or gravel aquifer is that it should not go deeper than the formation. If it already extends to the lower boundary of the aquifer, no increase in yield will result from increased depth.

When the water comes from a limestone formation, it is usually not possible to predict the effect of increased depth.

Relatively shallow wells are frequently affected by falling water tables caused by droughts. These often need to be deepened.

Increase depth . . .

Driven wells are easiest to make deeper. Simply attach the desired length of pipe at the ground surface and drive it down. One warning, however, must be noted. If the well point is driven completely through the aquifer into an impervious material such as clay, water output will be reduced to zero.

Dug wells cased with concrete or clay tile can sometimes be deepened by slipping the original casing down as material is dug from the bottom of the well. Additional joints of casing are added at the ground surface. This method is seldom used, however, because casings which have been in place for a long time are difficult to force downward.

Telescoping smaller diameter tile inside the ones already in place bypasses this difficulty. A 24-inch casing can be used inside a 30-inch one, but it is very difficult to work inside the small casing. Excavation is much easier if the original casing is 36 inches in diameter and a 30-inch tile is used inside.

Another method of increasing depth is to install a well point or standard well screen into the aquifer below the well. This is a particularly good solution if the material is coarse sand or gravel and has a high yield per foot of depth. The well point used for this purpose should be large enough in diameter to allow foot valve of suction line to fit inside without binding.

When a standard well screen is used, a hole in the bottom of the well has to be provided. If the formation material caves in, it will be necessary to use a bailing device to make the hole. If it doesn't cave in, a rotary post hole digger can be used. Mesh number gives an indication of the size of opening in a screen. The size of opening needed in the screen is determined by the size of sand or gravel in the aquifer. The dealer who sells screens or well points should be able to run a sample of the aquifer material through standard sieves and recommend the correct mesh number.

Drilled wells benefit from increased depth, also. A competent well contractor should be hired to deepen them.

Lengthen suction line . . .

When a well is deepened, it is usually necessary to lengthen the suction line. The opening, which is usually a foot valve, should be placed 8 or 10 inches from the bottom of the well.

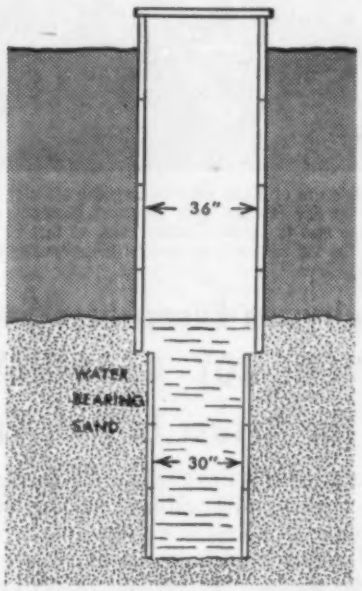
Sometimes this is all that is necessary to get an adequate supply of water. If the water is 8 feet deep and the suction line extends only 4 feet into it, lowering the suction opening to within 10 inches of the bottom should increase yield.

The amount of water needed and the suction lift of the pump determine how much the depth should be increased. Most manufacturers recommend their shallow well pumps for lifts of 22 to 28 feet.

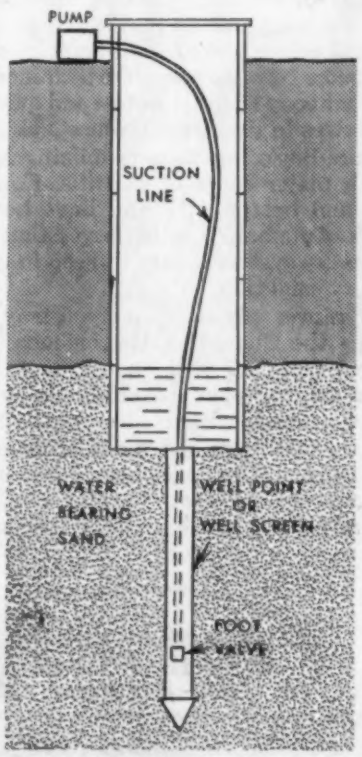
Observe safety rules . . .

Well work is usually dangerous. Safety rules should be strictly observed. A lighted candle or lantern should be lowered into a well before anyone is allowed to enter it. If the flame is extinguished, lethal gases are present.

Extreme care should be exercised to prevent objects from falling into the well when someone is working in it. The person working should wear a steel safety helmet.



INCREASE depth by telescoping small casing inside larger casing to penetrate water-bearing sand.



WELL POINTS also are used to extend depths. A well point or screen is sufficient if you have water-bearing sand below well.

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Tear off Coupon and mail it today. Show number of cows.

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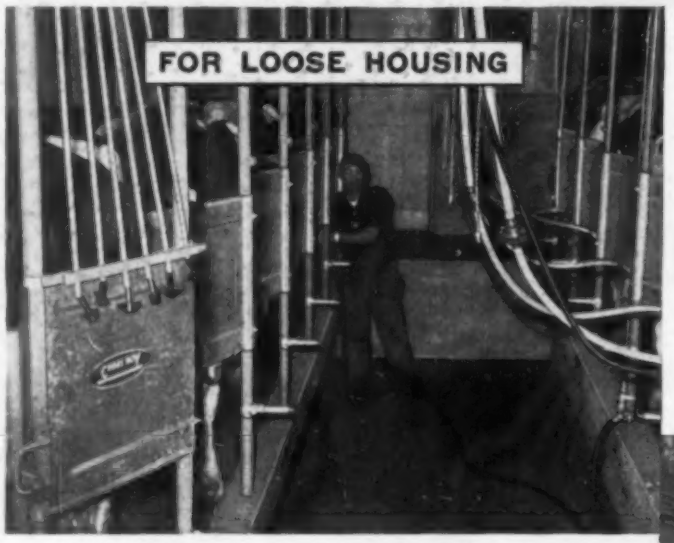
"So Far Ahead There Is No Comparison"

Says Ray Teschler about his new

CHORE-BOY HERRINGBONE SYSTEM



The double row of 6 Chore-Boy Herringbone stalls shown above is in use on the Ray Teschler farm, Richmond, Michigan. The system enables one man to handle 6 milker units, so that 60 cows per hour can be fed and milked. It is ideal for loose housing of cows.

MR. RAY TESCHLER, Richmond, Michigan, writes –

"I started using my new Chore-Boy Herringbone Milking System, consisting of 2 rows of 6 stalls, in November. Results have exceeded my expectations. This system is so far ahead of any other method there is no comparison. After one week we were doing so well I bought an additional herd. We now milk our enlarged herd faster and easier than when the herd was half the size. I doubted my ability to handle 6 milker units but am now certain it can be done. I like Chore-Boy's low-vacuum milking and master pulsation. My cows milk faster and better than they did with high vacuum. They stand better, let down milk faster and milk out cleaner!"

The Chore-Boy Herringbone Milking System lends itself well to dairies where cows are housed in stanchion barns. Such an installation shown above is on the Foster Brothers' Farm, Middlebury, Vt. Their system consists of 2 rows of 6 stalls with 6 Chore-Boy milker units.

The Foster Brothers write as follows: "We have used our milking parlor about 3 weeks and are pleased the way the cows have adjusted themselves to the new surroundings. The parlor is a pleasant place to milk, easy to keep clean and the 12 cows in such a small area keep it warm. We are now milking 83 cows."

"My Chore-Boy Pipeline and Herringbone Parlor has made our chores so easy and fast that my 10 and 12 year old boys often do the entire milking and chores alone, allowing me to do other necessary work. Milking is now a pleasure instead of a chore," writes Ray Korinek of Campbell, Minn. Ray's system consists of a single row of 6 stalls with 3 milker units. Chore-Boy Herringbone stalls may be used with small, medium or large herds.

Here is A Partial List Of CHORE-BOY HERRINGBONE SYSTEM Users

(December 1, 1957)

(Systems in use or being installed)

Foster Bros., Middlebury, Vt.
Roland Gerrain, Enosburg, Vt.
Carroll Stanby, Enosburg Falls, Vt.
L. E. Maxfield, North Hartland, Vt.
Theodore S. Gold, W. Cornwall, Conn.
Adolph Engelbrecht, Munnsville, N. Y.
LeRoy Camp, New Berlin, N. Y.
Clifford Hartong, Hockelstown, N. J.
George Graham, Plain Grove, Pa.
Clark Farms, Ennon Valley, Pa.
Ray Judy, Millen, Ga.
Monastery of The Holy Ghost, Conyers, Ga.
Dick Dressel, Tamiami Station, Miami, Fla.
Eugene Hawk, Bakersville, Ohio
Clarence Neal, Peebles, Ohio
Henry Wilcox, Lewisville, Ohio
Dwight Coffman, Farmersville, Ohio
Myers R. Duel, Williamsburg, Ohio
C. M. Reasor, Hamden, Ohio
Raymond Grant, Jackson, Ohio
Robert Lange, North Star, Ohio
Lyle Austin, Hogsett, W. Va.
James Suck, Ravenswood, W. Va.
Ray Teschler, Richmond, Mich.
Spencer Bros., Armanda, Mich.
Miller Bros., Eaton Rapids, Mich.
Donald & Dean Hasenick, Springport, Mich.
Gaylord Baum, Parma, Mich.
Seymore Thompson, Jackson, Mich.
Leonard Pung, Lansing, Mich.
Keith Cool, Kalamazoo, Mich.
Buckland Bros., Richmond, Ind.
George Hinshaw, Fountain City, Ind.
Hoyt Vanderbeck, Cambridge City, Ind.
Arthur Klein, Milton, Ind.
Roscoe Tompson, Cambridge City, Ind.
William Hill, Straughn, Ind.
Orland Golay, Lewisville, Ind.
Marion and Clyde Pearson, Brookville, Ind.
Max Harmon, Leesburg, Ind.
Marshall Sickels, Winchester, Ind.
Roy Sponhower, Auburn, Ind.
Dwight Carnahan, Butler, Ind.
Lynn Fuller, Butler, Ind.
Nelson Newell, Maysville, Ky.
Everett & Bunch, Cave City, Ky.
John W. Weddle, Liberty, Ky.
H. W. Roberts, Jr., Clinton, Ky.
Frank Hill, Murray, Ky.
Peter Coop, Collierville, Tenn.
Rufus H. Riggan, Lebanon, Tenn.
Robert Sutherland, Goodlettsville, Tenn.
B. S. Marler & Son, Cliftonville, Miss.
W. E. Blades, Kentwood, La.
Perkins, Ward, Ark.
Omar Yoder, Tuscola, Ill.
Allie Niemurg, Dietrich, Ill.
Elmer Helgeson, Monticello, Wis.
Norman Rule, Dodgeville, Wis.
Bruce Russell, Mineral Point, Wis.
Herman Severson, Cameron, Wis.
Donald Fiegel, Kasson, Minn.
Raymond Korinek, Campbell, Minn.
Carlot Hoff, Fergus Falls, Minn.
Lester Wilcox, Erhard, Minn.
Weibe's Dairy, Beatrice, Nebr.
Abram Thut, Elmdale, Kan.
Harlan Berry, Mayfield, Kan.
L. L. Broom, Floreville, Texas
George Miller, LaSalle, Colo.
Karl's Farm Dairy, East Lake, Colo.
Leo Hamilton, Merced, Cal.
John Bos, Bozeman, Mont.
Andrew Craven, Eberts, Ont., Canada
B. Schroeter, Brenner, Alberta, Canada

Dairymen Everywhere See The CHORE-BOY HERRINGBONE As The Answer To Their Problems

Just six months ago the new Chore-Boy Herringbone System of handling, feeding and milking cows was announced to the dairy world. The response has been tremendous. Progressive dairymen recognize in this revolutionary new development the answer to many of their problems. Chore-Boy Herringbone Systems are rapidly being put into use in all parts of the country.

Users are learning that they can milk up to 60 cows per man and do it easier than when they formerly milked only half as many cows. By handling more cows they increase their incomes. They find that cows like this system and quickly adjust themselves to the Herringbone stalls.

Chore-Boy's low-vacuum milking helps eliminate a major cause of mastitis. Cows produce more and better milk and have better udder health. Automatic feeding saves time and feed. The entire system is easy to keep in a clean and sanitary condition.

To answer any questions you may have concerning the Chore-Boy Herringbone System we suggest that you visit one or more systems in actual use. For your convenience, a partial list of users is shown in the column at the left.

Chore-Boy pioneered the Herringbone System in America and is the only company which manufactures the complete system, stalls, feeding mechanism and pipeline milkers. See your Chore-Boy dealer or write for full information.

CHORE-BOY LOW-VACUUM MILKING SYSTEMS

Write Dept. B for complete information

Profitable dealerships available

FARMER FEEDER COMPANY, Inc., Cambridge City, Indiana

Bargaining for the price of canning crops

New York farmers formed cooperative to bargain for price of their canning crops. Better returns were the result.

by W. S. Stempfle

YOUR editorial, "Will Dairy Follow Poultry," which discussed the prospect of integration in the dairy industry, suggests that readers would be interested in the marketing program of the growers of processing vegetables in New York state.

From time immemorable the contracts of processed crops have been written by the canner and offered to growers on a "take-or-leave-it" basis. The inevitable result has been that prices are slow to advance in time of short supply and quick to decline when stocks are ample. Terms of contracts have tended to be in the processor's favor.

A decade ago the New York Canning Crop Growers Cooperative was organized to improve the situation of tomato growers. Later corn and peas were included. The results obtained indicate that producers are well-rewarded for the cost and effort involved in this type of program.

The author is secretary of the New York Canning Crop Growers Cooperative.

At contract time no one, including the processor, knows what the crops will be worth in terms of the demand for the finished product, nor what the returns to the grower will be because of the wide variation in yields due to the weather.

Our cooperative believes the contracts of processed crops should be negotiated, and that this "meeting of minds" between processors and growers results in terms and prices which are realistic in respect to production costs and the demands of the market.

Negotiation procedure . . .

The method of negotiating contracts is simple. First the advisory committees (members are chosen on the basis of acreage of crops grown) meet to discuss the market situation, and to decide the price and other contract terms to be proposed.

Then the plant bargaining committees meet with the processors to seek approval of these proposals. Often, and especially with the first contracts, several meetings are required.

The third and final step is approval of agreed prices and terms by the policy committees, members of which serve on the board of directors and grow the crops.

The obvious purpose of approval by the advisory and policy committees is to insure uniform contracts and equitable treatment of processors. A review of the bargaining operations of the past several seasons illustrates how the plan operates and the results obtained.

In January 1956 canned and frozen corn were in short supply, tomato stocks were moderately short, and holdings of peas were larger than usual.

Our cooperative took the position that, with less than normal stocks and canned and frozen corn selling at higher prices, the 1956 corn contracts should pay substantially higher prices than previously. The co-op asked for and received a $2 increase.

Because of the low returns due to small crops of tomatoes experienced by New York growers in the previous several years, the advisory committee recommended a $3 increase and eventually approved contracts which paid $2.50 per ton more than the 1956 price.

Unlike corn and tomatoes, the stocks of peas in early 1956 were liberal, and there was the prospect that these large supplies would sell out at lower prices. In the opinion of the advisory committee pea prices in New York were quite fair, except prices of the more tender grades. The committee also felt the floor price of $80 should be raised. Contracts negotiated by the bargaining committees in 1956 paid $5 more for the 90 to 100 grades, and an $85 floor.

In all three crops the situation in 1957 was somewhat different than the previous year. The pack of corn and tomatoes in 1956 was 30 and 40 per cent larger than average. The pack of peas, except for frozen which was larger by two-thirds, was about normal.

In spite of large stocks and the fact that New York processors contracted smaller acreages of all three crops in 1957, we were able to gain a $2.50-per-ton increase on tomatoes and to hold the 1956 prices of corn and peas.

Because terms of contracts other than price affect growers' returns, the cooperative is concerned with such matters as the cost of plants, hamper rental, factory closing date, hamper limitations, scheduling procedure (in the case of tomatoes), varieties that are planted, and the cost of seed and harvest in the case of the corn and peas.

In negotiating our 1957 contracts we successfully resisted the determined effort of one processor to increase the cost of pea seed by $1 a bushel and, in the pea harvest, refused the demand of $4 an hour rental for the use of trucks that formerly cost $3, settling for $3.50.

It has been proven in the Empire state that growers benefit by the bargaining of contracts for processed vegetables. The experience of our cooperative would indicate the marketing situation of other crops and of livestock might be improved by the same method.

U. S. Department of Agriculture research workers found that out of an average of $3.62 spent weekly for dairy products, about half went for fluid milk. Butter accounted for 39 cents and cream, ice cream, and cheese made up the remainder.

You Don't Need "Extra Acres"* for

Larger Milk Checks

LARGER MILK CHECKS . . . that's your goal . . . and the goal of any efficient dairy farmer. And there's just one big way to increase the net value of your milk checks . . . by cutting your production and feed costs. Thousands of dairy farmers (yes, some of your own friends and neighbors, too) use OCCO's Dairy Feed Program to supplement their own pasture grasses and legumes. They are getting increased milk production and higher herd tests at lower feed costs. Let your OCCO man show you how OCCO Dairy Supplement, with OCCO Dairy Mineral and OCCO-Lak can improve your dairy profit picture. *Remember, more than 80% of OCCO feeders reorder OCCO . . . proof of QUALITY, proof of RESULTS!*

* **Just 10 extra OCCO-fed cows can give you more net income than 80 acres of average-yield corn. Yes, extra "acres" of income without adding more land!**

"Increased My Herd Test From 3.4 to 3.9 in 30 Days With OCCO . . . !"

"We put our 21 cows on a mixture of ground corn cobs, ground oats, bran, linseed oil meal, OCCO Dairy Mineral and OCCO-Lak on April 11. In 30 days the herd test increased from 3.4 to 3.9 on the OCCO Dairy program! Our net profit per cow was $25.64 for the month."

Delbert Hawkins, / Hunt & Hawkins Dairy Farm, Garnaville, Iowa

OCCO Protein A Plus MINERAL FEEDS

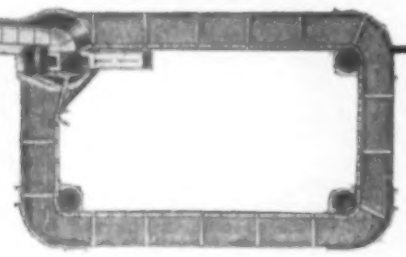
A Trusted Name Among Livestock Men Over 46 Years

HOME OFFICE: OELWEIN, IOWA. ALSO 34 CONVENIENTLY LOCATED WAREHOUSES IN 22 STATES
WRITE FOR NAME OF YOUR NEARBY OCCO MAN AND COMPLETE FOLDER OF OCCO "PROTEIN PLUS" FEEDS

GET IT ALL... SOLIDS

AND LIQUIDS TOO

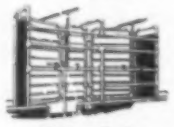
WITH A Louden TRANSFER-TYPE BARN CLEANER



Gutter chain travels at 14 ft. per minute. Stays in gutters at all times. Solids and liquids are transferred to elevator hopper. Elevator paddles sweep through hopper, carry litter up elevator at 55 ft. per minute. Fast enough to get both solids and liquids with no run back. Litter is deposited in spreader.

Electric Ventilation

Bunk Feeder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Send me, at no obligation, full information on the Louden Transfer Type Barn Cleaner.

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We print stationery for thousands of breeders all over the U.S.A. Distinctive style and personal touch. Pictures of your own breed for you to choose from. Write for stationery circular today.

HOARD'S DAIRYMAN Fort Atkinson, Wis.

PEERLESS "All-Purpose" Farm ROLLER MILLS

CRIMP—CRACK—GRANULATE

All small grains and ear corn. Feed DUST-FREE rolled grain for better feeding results. Roll it with a PEERLESS. Complete line stationary and portable mills. Write for LITERATURE.

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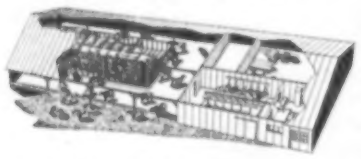

THE LOW COST STEEL BUILDING OF "101" USES

New method of construction produces attractive, permanent pole-free building at practically the cost of a short lived pole barn.

Mail coupon today for description, easy payments, special Winter discounts.

Martin Steel Products Corp.,
1206 Longview Ave., Dept. HD-1
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Gentlemen: Please send me complete information on the new Martin '101'.

Name

Address

COWPOX*
Ringworm

Blu-Kote dries up cowpox lesions, controls secondary infection*. Promotes clean, rapid healing of teat sores, skin sores, abrasions. Is Germicidal and Fungicidal. It stays on.

At drug and farm stores or write:
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She CAN'T Kick or Switch Her Tail!

Breaks Kicking Habit Quick!

Amazing new HASTINGS Anti-Cow-Kick locks hock-joint, ONE leg only. Cow positively Can't Kick! Holds tail, too. Easiest to attach, remove. Simplest, surest way to break heifers, chronic kickers. Life-time wear. Shipped postpaid ONLY $2.98. No C.O.D.'s please. State if for dairy or beef cow. Free Circular. ORDER NOW!

HASTINGS EQUITY GRAIN BIN MFG. CO.
Dept. 13, Hastings, Nebr.

New MEYER Elevators

Send for FREE Crib Blueprints and large catalog showing 10 styles of FAMOUS Meyer FARM ELEVATORS, the Corn Belt leader. Rugged—no short turns—Wide, Extra-Heavy Buckets—50 bu. corn or small grain in 3 minutes. Choice roller or malleable chain. Exclusive New Hoist. Write today.

MEYER MFG. CO. BOX 5663 MORTON, ILL.

IT PAYS TO KNOW

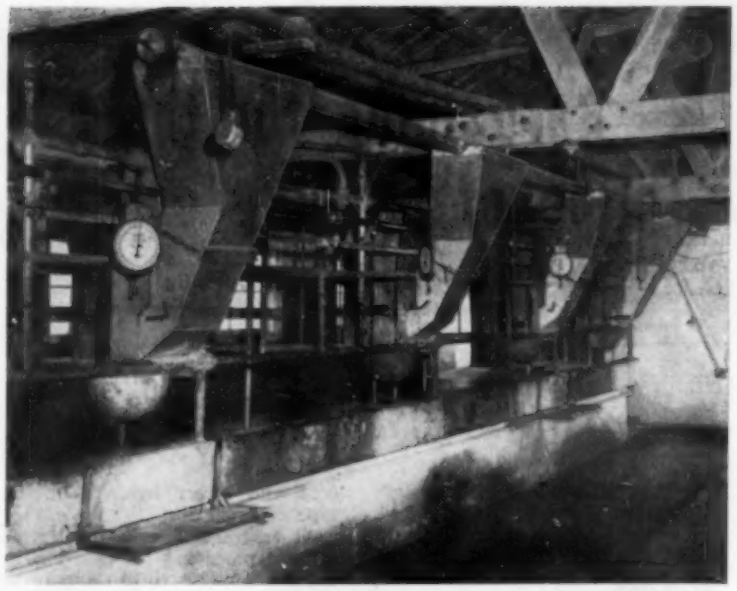
Where Your Cash Comes From and Where It Goes

Yes, income and expense records are a NECESSITY these days. The new Hoard's Dairyman Farm Account Book is simple, easy to keep up, yet complete enough to give you (and the income-tax man) a clear, accurate picture of your financial condition.

We offer a three-year renewal of your subscription plus the Farm Account book, for only $2.25.

If your subscription is already paid ahead, you are entitled to purchase Account Books at 25 cents per copy.

HOARD'S DAIRYMAN
Fort Atkinson, Wis.



FEED BINS at each stall are filled by auger carrying feed from overhead bin. A damper-type valve allows proper amount to be fed.

This is automatic feeding

By using automatic set-up, manpower needed to handle this herd was cut from five to two.

by Durell Davis

FEEDING the dairy herd is a big chore. Putting out feed at milking time takes a lot of work and a lot of time.

But automatic (or semi-automatic) feeding is as near as your local tin shop. Take the James Sherman farm near Crossroads, Alabama. Feed is practically untouched by hand or shovel. And the whole feed-handling system, except for the mixer and elevator, was built at reasonable cost at a nearby tin shop.

"Feeding is a snap now," declares farm manager H. G. Snelling. "We feed 100 cows in five minutes." Two men now do the work it required five men to do before the feeding set-up was installed.

Here's the way it works. One man prepares cows for milking; another man attaches the milking machines and strips the cows. The Sherman farm has a pipeline system so there's no milk to carry.

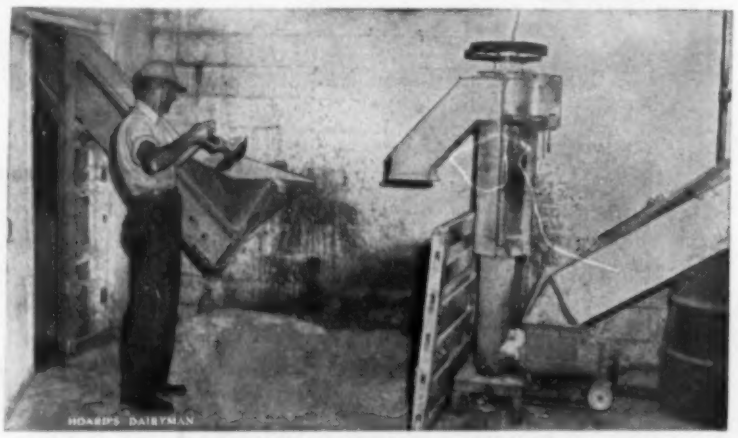
The feeding system is fairly simple. Feed ingredients are fed into an elevator which leads to the hammer mill. Molasses is fed by pipe directly into the molasses attachment on the mill. After hay, grain, concentrate, and molasses are mixed together they go to an overhead storage bin in the ceiling of the milking parlor.

From the overhead bin a 6-inch auger-type elevator takes feed to the individual metal bins at each stanchion. Each stanchion in the four-place milking parlor has a metal bin which empties into the feed cup. The feed cup is marked inside so that pounds of feed can be accurately judged and each cow fed according to her production.

The auger fills the stanchion bin nearest the overhead storage bin first, then the next, and so on until all four stanchion bins are filled. Then at milking time a damper-type valve in the stanchion bin is opened to allow the desired amount of feed to fall into the feed cup.

"The only thing to get out of order or cause trouble is the auger," says Snelling. "And so far we haven't had a bit of trouble."

The set-up isn't costly, Snelling says. It's hard to set an exact figure though because some dairyman might be misled. It would be easy to get an estimate from a local sheet metal shop.



HAND LABOR is required to shovel ground feed from hammermill into elevator. Elevator carries feed to large overhead storage bin.

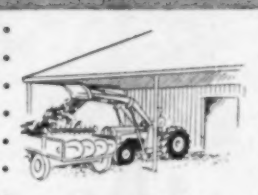
what's it worth | to SAVE YOUR BACK a HUNDRED WAYS?

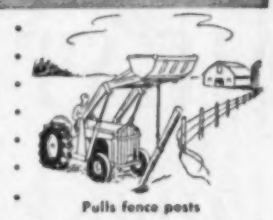
Levels and grades

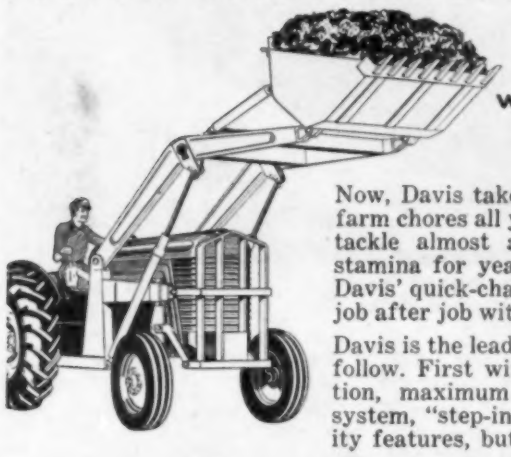
Moves tanks, troughs, sheds

Cleans up rocks, logs, stumps

Stacks hay, tops out 21' stack


Cleans cattle shed


Pulls fence posts



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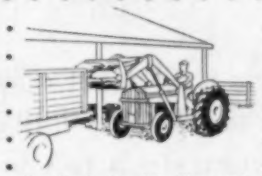
WILL HANDLE MORE LIFTING, LOADING, DIGGING, DOZING JOBS THAN ANY OTHER IMPLEMENT

Now, Davis takes the work out of hundreds of farm chores all year 'round. Here's the power to tackle almost any assignment... the rugged stamina for years of dependable service. And, Davis' quick-change attachments let you handle job after job with ease!

Davis is the leader... the one that others always follow. First with rugged box-frame construction, maximum visibility, superior hydraulic system, "step-in" design, and many other quality features, but still priced competitively low.


Handles feed and fertilizer sacks

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Davis Loaders and Backhoes are available for all popular models of International, Ford, Fordson Major, Ferguson, Case, Massey-Harris, Allis-Chalmers, Oliver, John Deere, Minneapolis-Moline, and Work Bull Tractors.

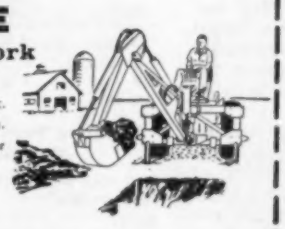
SOLD AND SERVICED EVERYWHERE BY BETTER DEALERS

For the name of your nearest dealers call Western Union by number and ask for Operator 25... or send coupon. *Please specify make of tractor.*

the DAVIS BACKHOE

can handle all your Farm Trenching Work

Dig at any angle up to 200 degrees, even flush against fences, barns, etc. Ideal for trenching, cleaning ditches and canals, digging septic tanks. Features 10,000 lbs. breakaway for frozen ground. wide visibility, operator comfort, low price.



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Please send me literature and name of dealer on Davis Loader____
Davis Backhoe____to fit a_____tractor.

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TOWN _____ STATE _____

Cut off here and mail to Cow Judging Contest, Hoard's Dairyman, Fort Atkinson, Wis.

YOUR OFFICIAL ENTRY BLANK

28th annual HOARD'S DAIRYMAN COW JUDGING CONTEST

Do not mail your entry blank until you judge all five breeds
MAIL ON OR BEFORE MARCH 17, 1958

This entry blank is for single or family entries.
4-H groups, F.F.A. groups and colleges should write for special entry blanks. Each 4-H blank holds 30 entries, each FFA blank, 40. Order enough.
No entries will be returned, keep a copy of your placings.
Twelve cash prizes in senior and junior divisions:
($50-$25-$20-$15-$10-$7-$6-$5-$4-$3-$2-$1)
Senior . . . anyone 18 years of age, or over, March 17, 1958
Junior . . . anyone under 18 years of age, March 17, 1958

Four cash prizes in each of the following divisions: Family, 4-H, F.F.A. and vo-ag instructors. ($50-$25-$15-$10)

Family must include 3 or more, at least one parent and one child over 10.

Three new cash prizes to winning college teams. ($50-$30-$20)
All entries in families or groups eligible for individual prizes.

Contest open to everyone except Hoard's Dairyman employees or members of their families.

		1ST CLASS		2ND CLASS		3RD CLASS		4TH CLASS		5TH CLASS		
PLEASE PRINT YOUR NAME	AGE	BROWN SWISS indicate placings by letters 1st 2nd 3rd 4th	Score	GUERNSEY indicate placings by letters 1st 2nd 3rd 4th	Score	HOLSTEIN indicate placings by letters 1st 2nd 3rd 4th	Score	AYRSHIRE indicate placings by letters 1st 2nd 3rd 4th	Score	JERSEY indicate placings by letters 1st 2nd 3rd 4th	Score	Total

Please leave columns headed "score" and "total" blank. Mail on or before March 17, 1958

NAME..... P. O. ..... R. D. ..... State.....

DAIRY FARM HOME

MEAT . . . makes the meal

More meat is eaten per capita in America than in practically any other country — a fact in our high level of nutritional health.

by Marian Pike

SAVORY PORK LOIN ROAST, beautifully garnished with spicy red crabapples, carved and served at the dinner table, is "fit for a king."

MEAT is one of the most easily-digested and universally-liked of foods on our tables.

One of our most important sources of top-quality protein, meat contains all of the protein substances in the proper proportions for growth, tissue replacement, and repair.

Meat supplies all of the known B vitamins which are essential to many bodily functions and participate in the formation of blood.

Minerals supplied by meat include iron for the formation of blood and prevention of anemia, as well as those essential to the functioning of all body cells and maintenance of mineral and fluid balance.

Fortunately thrifty meats are just as nutritious and digestible as expensive cuts. The infinite variety of meat and its preparation make it so varied the appetite need never tire of it.

Pork loin roast . . .

For elegant eating, there's nothing more flavorful than a pork loin roast. For company, the choicest of pork roasts is the center loin, a part often cut into pork chops. The loin end or the rib end also are very desirable.

About ⅓ to ½ pound of bone-in meat should be allowed per serving of pork roast. The new lean look in pork trimming means more meat per serving to the homemakers. There now appears only ¼-inch layer of firm white fat on pork cuts, which is the minimum amount of fat needed for the best flavor and juiciness.

Be sure the backbone has been freed from the rib and bones for easy carving at the table. You can do this, or you can have your meat man do it. But leave the backbone in place for roasting. It retains the shape of the roast and holds in juiciness.

Pork requires long, slow cooking and should be served well done. When the roast shows no trace of pink meat, it is ready to serve. Remove the backbone and place the roast on a platter. Then the pork chop slices can be easily served by cutting between the rib bones.

Cinnamon apple sauce, spicy peaches, tart red crabapples, or pineapple slices garnish a pork roast beautifully. If you prefer a smooth and glistening glaze to enhance the appearance of the roast, here's a good recipe:

Mix together **1½ cups brown sugar, 2 to 3 tablespoons vinegar, 1 teaspoon dry mustard, and ⅛ teaspoon powdered cloves or ginger.** Cover the surface of the uncooked roast with the mixture. Several times during roasting, spoon the drippings in the pan over the roast.

Method and time for roasting . . .

Place a pork loin roast, fat side up, on a rack in an open pan. Do not add water. Do not cover. Insert a roast meat thermometer. Roast in a slow oven (325 degrees) using the following schedule:

Weight	Approximate roasting time	Internal temperature
3 lbs.	2 ¾ hours	185 degrees
5 lbs.	3 hours	185 degrees
8 lbs.	3 ½ hours	185 degrees
12 lbs.	4 hours	185 degrees

Braised Pork Shoulder Steaks with Lima Beans

1 cup dried lima beans
Hot water
Salt
4 pork shoulder steaks
3 tablespoons butter
1 small onion, chopped
⅛ teaspoon pepper
1 bay leaf
2 tablespoons brown sugar
2 tablespoons vinegar

Rinse lima beans; add 2½ cups hot water; and boil 2 minutes. Remove from heat; cover; and let it stand 1 hour.

Add 1 teaspoon salt and simmer 1 hour or until beans are tender. (Add more water during cooking, if necessary.)

Brown steaks in butter; add onion and cook until lightly browned. Remove steaks from skillet. To drippings, add beans and their liquid, 1 teaspoon salt, pepper, bay leaf, brown sugar, vinegar, and 1 cup hot water.

Arrange steaks on beans; cover and cook over low heat 1 to 1¼ hours or until meat is tender. 4 servings.

Pork links with partners . . .

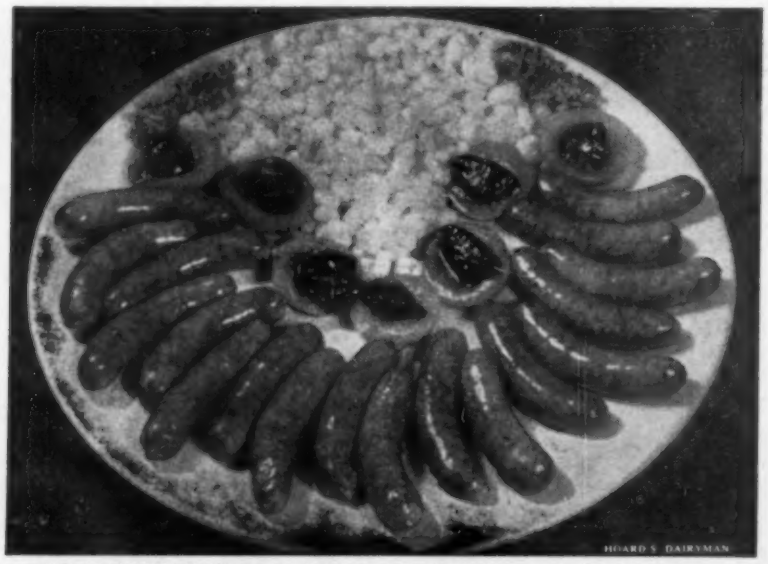
Pork sausage should be cooked slowly to insure complete doneness. Avoid piercing the links with a fork as they cook. Pricking will let some of the juiciness and flavor escape. Kitchen tongs are a big help in turning the plump sausages to brown on all sides.

Pork sausage links may be pan-fried over very low heat until thoroughly cooked and brown. They also may be cooked in a covered skillet with a little water added. Remove the cover to brown shortly before serving.

If your pan is large enough, just before sausages are done, you can pour all but a tablespoon of drippings off and place apricot halves cut-side down and allow them to brown slightly. For serving, top with homemade jam.

Hominy is sometimes overlooked as an accompaniment. In this case, its bland flavor blends ideally with the sausage and apricots. The drained hominy may be heated right in the same skillet to take on some of the richness and seasoning from the pork sausage links. Arranged on a pretty platter, this meal is certain to get a hearty reception. **THE END**

PORK SHOULDER STEAKS have been cooked with chopped onion, lima beans, brown sugar, and vinegar. They are fork-tender and juicy.



PORK SAUSAGE LINKS sizzling with their "come and get it" aroma set the pace for a quick supper which will please the whole family.

From Day to Day

by Lois J. Hurley

A VERY heart-warming letter and clipping came in last fall from Mrs. E. P. Fluke of Ohio. They described the 25th anniversary celebration of the Nankin Federated Church, near Ashland, a combination of Methodist and Presbyterian congregations.

As far back as 1920, the account goes, Methodist worshippers from the church established in 1829 joined the Presbyterians who went back to 1834 in wishful thinking about how nice it would be if the two small congregations could meet and worship together. But it took a severe windstorm, nine years later, to really "blow them into brotherhood."

In that year the chimney of the Methodist church was damaged so that the furnace could not be used; the bell tower of the Presbyterian church was so twisted that the building was considered unsafe. So, the two congregations met together in the school house. From that service of friendly unity, formal efforts were started to form a federation, acceptable to the local people, the Methodist Conference and the Presbytery. A Methodist minister was sent to help formulate the plans.

How they actually worked out a combination of physical plants is interesting enough, I think, to quote from the Ashland Times-Gazette:

"The Presbyterian building was moved to the site and joined to the south side of the Methodist building. Two stories of Sunday School class rooms, an annex to the sanctuary, an office and lounge were constructed in it, while the Methodist building became the main sanctuary of the church.

"In the summer of 1931 the basement was excavated to provide space for an assembly room, kitchen, furnace, and rest rooms. During this time services were held in the Methodist building with some Sunday School classes meeting in the park and the Methodist parsonage next door. The minister lived in the Presbyterian manse, which is still used as the parsonage of the Federated Church."

This vigorous little church of 285 members has been served by ministers of both denominations, alternately, and the account of the silver anniversary of unity concludes with these significant words: "All have worked together for the good of the Kingdom and the Federation has gone forward through the past 25 years in a spirit of harmony."

What this Ohio community has done, more should strive to accomplish. Particularly commendable is the way they agreed upon the use of the property belonging to each congregation for the common good of all. So often consolidations of schools, businesses, churches, estates, or what-have-you hang up on the snag of who's going to get the better of the deal. At Nankin they just joined up the walls and proceeded ahead.

In the little village of less than 600 people where my mother lives, there are four Protestant churches and several close-by country churches, still attempting to operate, after a fashion. I know for a positive fact that three of these churches could unite into a larger, more effective congregation without anybody's deep beliefs being stepped on. No doubt about the same thing is true in your nearby village for I fear there are not many Nankin Federated Churches to stand up and be counted!

Dryer report . . .

You may remember that some issues back I mentioned the fact that I would have to make my next appliance purchase a clothes dryer, as my basement space had been cut in half due to paneling off a room for office and sundry uses. Here's my report on dryers, as of two months' experience:

We chose a non-deluxe model with three settings for regular drying, wash-and-wear which dries more slowly at lower temperatures, and an air-fluff setting over which a controversy wages. The salesman said this button could be pushed for the last few minutes of the drying period to remove wrinkles, but the instruction book says it is to use on pillows, blankets, shag rugs, orlon coats, and so forth, that you just want to fluff and freshen. Time and experiment will tell.

A new principle of even heat distribution around the drum of my dryer supposedly dries a load of clothes in 25 minutes, but this is only wishful thinking. Except for the thinnest cottons, I have to give everything from 50 minutes to a full hour.

Bedding looks a bit limp and beat up and wrinkles in the sheets defy my steam iron, which has no trouble smoothing line-dried sheets, without dampening. White things look dull; woolens, nylons, and some cottons crackle with static and prick me.

That's the debit side. On the credit side I wholeheartedly enthuse over towels, socks, knit underwear, and sheet blankets that dry beautifully fluffy. And there's no denying that it's wonderful just to pile the clothes in the dryer, push a button, and have them ready to put on and wear in an hour.

No baskets or carts of heavy wet clothes to tug and lug; no hanging up or taking down; no tangled clotheslines; no frosty fingers. And wash day goes calmly by, be it raining cats and dogs!

Mix your own . . .

Wisconsin homemakers, and probably many others who belong to home demonstration groups, have long known the economy and joy of using their own ready-mix for biscuits, muffins, pancakes, quick coffee cakes, and so forth. In case you haven't been introduced to this handy helper, here it is:

For 13 cups of all-purpose mix, stir **¼ cup double-acting baking powder** and **1½ tablespoons salt** into **9 cups sifted all-purpose flour** and sift three times. With a pastry blender cut in **1½ to 2 cups cold vegetable shortening** until the mixture looks like cornmeal. Store in a tightly-covered container in a cool dry place till ready to use.

To make biscuits, stir **½ cup milk** into **2 cups master-mix. For muffins,** add **¼ cup sugar** to **2 cups mix,** then **1 beaten egg** and **1 cup of milk,** stirring well into the dry ingredients. Vary with fruits, such as **blueberries or mashed banana, or ¼ cup chopped nuts.**

9090. Graceful empire-princess dress with little fitted jacket. Printed pattern in misses' sizes 10 to 20. Size 16 dress takes 4⅝ yards 39-inch fabric; jacket 1⅝ yards. Price 35 cents.

4644. Half-size fashion with smooth, slim lines; accent on cleverly-cut collar. Printed pattern in sizes 14½ to 24½. Size 16½ takes 4⅞ yards 35-inch fabric. Price 35 cents.

4659. Graceful princess lines with pretty squared neckline for the not-so-slender figure. Printed pattern in half sizes 14½ to 24½. Size 16½ takes 3⅝ yards 35-inch fabric. Price 35 cents.

9054. Pretty rounded yoke with open mandarin collar; graceful 8-gore skirt. Make it casual or dressy according to fabric. Printed pattern in misses' sizes 12 to 20; 40. Size 16 takes 4 yards 35-inch fabric. Price 35 cents.

9379. Jiffy-cut printed pattern includes all three blouses. Each pattern is in one piece; pin to fabric and cut entire blouse at once. Misses' sizes 10 to 18. See pattern for yardages. Price 35 cents.

4766. Saucy style for Sissy has cool, scoop neckline; waist cinched by bowtied sash. Skirt full and bouncy. Printed pattern in child's sizes 2,4,6,8. Size 6 takes 2⅛ yards 35-inch fabric. Price 35 cents.

7136. Bluebirds in easy embroidery add a gay note to kitchen towels. Transfer of 7 motifs (one for each day of the week) each about 5½ x 6 inches. Price 25 cents.

7187. Any tot will love his "Kiddie" cover. Appealing little figures are embroidered in gay colors on separate blocks. Fun to make. Transfer of 9 kiddies, each about 5 x 6½ inches. Price 25 cents.

Pattern Nos.	Size

HOARD'S DAIRYMAN, PATTERN DEPT.
Fort Atkinson, Wis.

NO PATTERNS EXCHANGED

$_____ for patterns.

NAME_____ RFD_____

CITY_____ STATE_____

Get your calves off to a

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POULTRY

Joe W. Sicer

Windowless houses

Poultry houses without windows are an attempt to provide more uniform temperature and light. Their success is partially offset by new situations which they create.

WHY should chicken houses have windows? To let in the light, some one will answer. But we can use electric lights and get more even distribution of illumination over all the building than we can possibly get from natural light coming through windows as commonly placed in chicken houses.

To get ventilation, some one else will add. But we can ventilate by means of fans and can really get a more dependable flow of air because when the fans run, air must move.

What other reasons are there for windows? If we can do the job better without them, then why put them in? Confronted with this question, one not-too-readily-convinced poultryman came back with the contention that windows came in mighty handy when it was time to throw the manure and litter out of the house!

Experience has shown that windowless houses for chickens can be quite successful. In fact, they have a number of advantages over conventional houses. They also have some disadvantages.

Lower construction cost . . .

It costs less to build a windowless house. It isn't that the window sash are so expensive. It is the cost of sash plus the cost of a window frame of some kind and the extra labor involved in fitting the wall around the frame and the sash into the frame.

It is much more simple to just keep on laying blocks or nailing on siding than it is to measure where the windows go, get half blocks to use in the right places or saw off the siding to fit around the window opening.

With no sun shining into the house through windows you will have less of a rapid warming up in the house during the day time and hence a more uniform house temperature over a 24-hour period. This will be especially true if the windowless house is well insulated. There is evidence that with a more uniform temperature, higher egg production can be expected.

By using artificial lights altogether you can control the length of the birds' "day." You can even control the time of their "day." Some poultrymen have found it advantageous to have their flocks lighted from 1 a. m. to 3 p. m. the year around. On such a schedule, practically all of the work with the poultry can be taken care of before noon. The afternoons are then completely free for other work.

With cages or slats . . .

Windowless houses, at present, are used most commonly with double-deck laying cages or with slatted floor houses. With hens under these conditions, the number of birds per square foot of floor space in the house is stepped up enough that sufficient body heat is generated, even during cold weather, to make force draft, fan ventilation feasible.

A frequently found arrangement is to use ventilating ducts, both intake and outlet, that run the full length of the building. Holes distributed along these ducts make for a fairly uniform movement of air throughout all of the house.

Hot weather presents somewhat of a problem in windowless houses. Heavy insulation (four inches of rock wool or its equivalent) in the ceiling and a reflective roof covering such as aluminum or white paint will reduce the problem. An abundance of fan capacity to move a large volume of air is essential.

Danger — power failure . . .

The big hazard with windowless houses is that of a power failure. If the fans stop the result can be costly.

I visited one windowless cage layer plant last summer where the truth of that statement was driven home to me. The owner told me of his experience of several weeks previous. He had checked his house at midnight. Everything O. K. But between then and early the next morning something had happened to his power. There was no storm. Just a failure somewhere in the circuit for his laying house.

In that short time more than 500 of 1,680 hens had died.

When windowless houses are used, regardless of how dependable you think your power may be, you would be wise to install a relay, battery-operated alarm that would alert you should the power go off for any reason. Then you should plan to have a stand-by generator ready for prompt use, or you should have your house so constructed that you can readily get it open enough to take care of the emergency. Panels of insulation board in the walls may be the answer. They could be built for quick removal, held in place by hooks or turn buckles.

One other drawback to windowless houses is a higher cost of operation. Complete dependence on artificial light and on fans for ventilation means a fairly sizable electric bill each month.

This added cost, however, may be offset if the more uniform environmental conditions result in enough of an increase in egg production and improvement in feed efficiency. This hope is still awaiting experimental supporting evidence, but many poultrymen with windowless houses feel that they are well worthwhile.

Seven-year-old Johnnie had been taken to the zoo to see the animals. He stood before the spotted leopard's cage for a few minutes, staring intently and keeping silent. Then, turning to his mother, he asked, "Say, Mom, is that the dotted lion that everybody wants Daddy to sign on?"

SWINE

More profit from multiple farrowing

It contributes year-around income, provides higher average price for hogs, and balances labor required.

by Fred J. Giesler

IT DOESN'T make sense to market and process one-fourth of our hogs during November and December and only one-seventh of them in June and July. We have nothing to gain by flooding the markets at certain seasons, causing sharp price changes, unbalancing our income, and letting our hog raising equipment sit idle for a long period of time during the year.

Just because we have been doing things that way for many years does not mean that we can't do something about it now. Some farmers are already starting to move in the direction of changing their farrowing program to provide a more uniform supply of pork going to market throughout the entire year. These men have scheduled their farrowing to come four to six times a year, and a number of them even more often.

Multiple farrowing is defined as a system of hog raising in which you farrow two or more groups of sows at least four times a year.

As an example, using two sets of sows, you would farrow the first group during the months of November and December. The same set of sows would farrow a second litter some six months later, say in May or June. Your second group of sows would farrow in February or March and again six months later in August or September.

You would market hogs probably eight or more times throughout the year. In each group, if you had 75 or 100 hogs, they could be topped out, taking hogs weighing 200 to 220 each time. You probably would have 30 to 40 hogs ready; and, in another three weeks or more, you could move most of the rest to market.

There seems to me to be about half a dozen sound and practical reasons why we should consider adopting the multiple farrowing program in hog-producing states.

Better price for all . . .

When you compare the hog prices and receipts for Chicago during the years 1954 to 1956, you will find that, if a farmer would have spread out the marketing of his hogs on a year round basis, he would have received an average of $17.34 per hundred-weight, compared to selling them on a one-crop basis for $14.81 during November and December.

This means that he would have received $5.06 advantage per 200-pound hog produced through a multiple farrowing system. When you follow a one-crop system of marketing program, you will find that more often than not, more hogs are sold in the valleys of the market prices than are sold at the peaks of the hog prices.

When you use the multiple farrowing system, you spread out your income. This makes it much easier to pay the feed bills and provide money for the family living expenses.

Your hog-raising chores are spread out under the multiple farrowing system, and they don't bunch up and compete so seriously with other farm operations.

Then, too, you can afford a better herd boar. With multiple farrowing, your boar cost per litter is much less than under the one- or two-litter system because you use him on a year-round basis.

Takes less capital . . .

Young farmers find they can get started in hog production with a smaller initial investment when a multiple farrowing system is used. There is no need for a large amount of equipment on the farm. In fact, if you were to produce 200 head of hogs per year and you would spread your farrowing dates out to four different periods, you would need about enough equipment to house 50 hogs at a time rather than 200.

Take, for example, the depreciation on one of your moveable hog houses costing about $400. You could depreciate this house at the rate of $40 per year over a 10-year period. If you had 40 pigs using the house, in a year's time the depreciation charge per pig would be $1. If you use the house for 4 batches of 40 pigs each, the cost would be only 25 cents per pig.

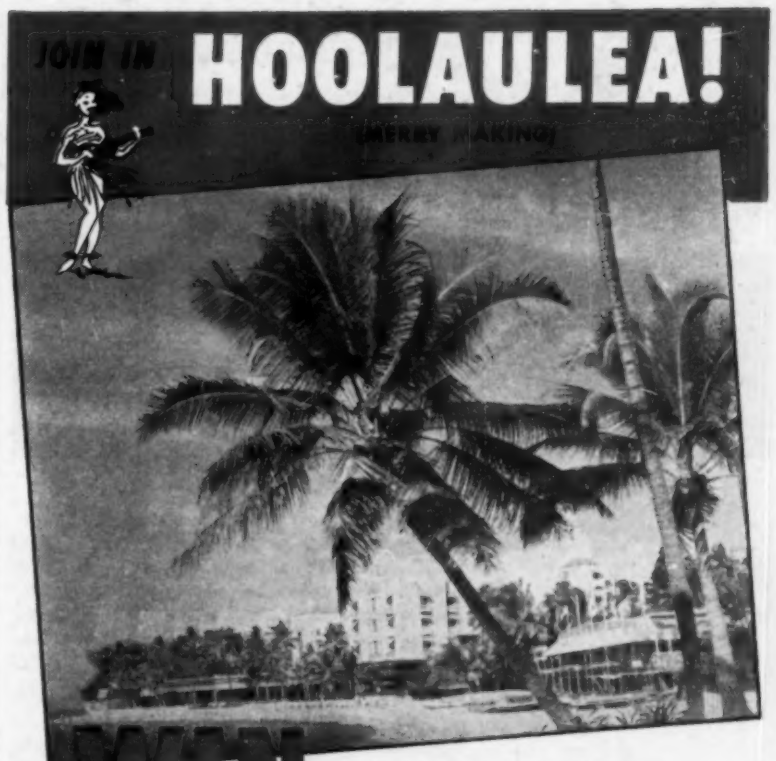
Keeps consumers buying . . .

When using multiple farrowing, you can point to more uniform production as a way of keeping a steady supply of pork flowing to markets so consumers can buy it.

On the other hand, when market receipts dry up and the wholesale and retail prices get out of line with competitive foods, the housewife is inclined to back away and buy something else. The retailer doesn't often feature any meat that is high priced relative to the rest. This means that many budget-bound housewives get out of the pork buying habit.

When large numbers of hogs are sent to market and the price of pork is about in line again with other foods or maybe below, it takes considerable advertising and promotion to win back this lost market. Often, this calls for substantial price slashes. The cost of regaining customers is enormous, and the bill is paid by everyone in the industry.

Multiple farrowing will aid the swine industry tremendously when all farmers take the step to adjust their swine enterprise by leveling out the farrowing of hogs on their farms.



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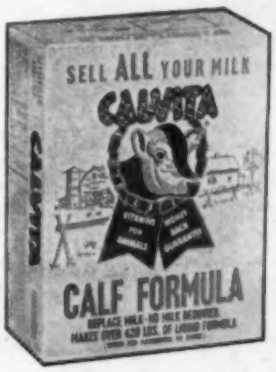

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ARTIFICIAL BREEDING

Use of proved sires increasing

Forty per cent of sires are proved. They breed at least 70 per cent of the cows; about 4,300,000 in 1957.

by H. A. Herman

THE use of proved sires reached a new high during 1957. Beginning last January, 2,651 sires were in artificial breeding service in the United States. Of these, 1,074, or 40.5 per cent, were proved. This is an inspiring gain because for the past three years only 37 per cent were D.H.I.A. proved.

While we should not emphasize unduly a change from 37 per cent to 40.5 per cent, it means more than the figures might imply. We have hovered around 37 (at the most 39) per cent proved sires for the past five years. Good proved sires have been scarce and there has been some question as to whether or not our present D.H.I.A. and official testing programs in America are capable of producing as many really outstanding proved sires as are needed each year. It is encouraging to move off "dead center" in the percentage of proved sires in use.

During 1957, the 2,651 sires used in artificial breeding will account for the servicing of about 6 million cows. This is 26 per cent of our milk cow population of breeding age. It amounts to over 2,300 cows serviced per average sire.

Proved sires heavily used . . .

Young, and unproved sires, are rather lightly used. The proved sires come in for very heavy use. Reports from the 75 organized artificial breeding associations indicate many are breeding 70 to 100 per cent of the cows serviced to proved sires. Many of the proved sires are annually credited with 5,000 to over 8,000 first-service cows.

Adding this up, we find that in 1957 more milk cows were bred to proved production sires than any time in our history. If we take the minimum figure of 70 per cent being serviced by proved sires, it means that over 4,300,000 milk cows were, or are, in calf to proved sires as a result of 1957 artificial breeding.

Prior to 1938, when only natural breeding service was used, 10 per cent of the total sires in use were proved. At best we calculate this could have resulted in only 10 per cent of the nation's milk cows serviced by proved sires — a figure of some 2½ million cows prior to 1938. Furthermore, proved sires were largely in purebred herds and leading D.H.I.A. herds which were large enough, and the owner in a position to maintain a proved sire in his dairy operations.

Whatever weaknesses might be found in our present sire selection program for artificial breeding, and there are some because we do not have enough production testing, the cold facts are that artificial breeding is bringing better production sires to the barnyard of hundreds of thousands of American dairymen. This, of course, is a realization, in part, of the goal destined for this program over 20 years ago.

Above average production . . .

Merely using proved sires is not the complete answer in a dairy cattle improvement program. A proved sire is usually defined as a sire with 5 to 10 production tested daughters, on an unselected basis. The U.S.D.A. defines a proved sire as one which has five production tested daughters (unselected) compared to their production tested dams. Certainly this is a minimum requirement.

Some proved sires in D.H.I.A. testing are found to be below average; some are average, and some (about one-third) are above average. In every instance, feeding and management of the daughters is an important factor and greatly influences the production level of the daughters of any sire. Private breeders as well as personnel of artificial breeding organizations are compelled to evaluate environment in deciding on the choice of a proved sire.

Environment to date cannot be evaluated in mathematical terms. It is either good, poor, or average, and human judgment is often

		Dams		Daughters	
Breed	Sires	Milk	Fat	Milk	Fat
	No.	lbs.	lbs.	lbs.	lbs.
Ayrshire	56	9,652	396	10,689	453
Brown Swiss	79	10,890	440	11,392	473
Guernsey	229	8,693	421	9,106	446
Holstein	485	12,689	458	13,538	502
Jersey	204	8,344	443	8,875	473
Shorthorn	18	7,664	297	8,339	326
Red Poll	1	9,930	376	9,337	396
Red Dane	2	8,269	351	10,396	439
Average or Total	1,074	10,626	440	11,304	477

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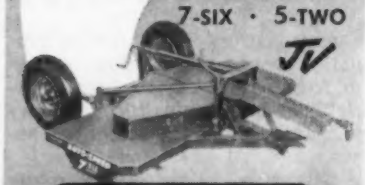

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strained, and gambling instincts aroused, in every sire selection made. This, of course, is a part of the glamour associated with sire selection and cattle improvement.

Cattle breeding is an art as well as a science. Figures simply cannot be a complete answer to the value of breeding animals. The judgment and knowledge of the dairymen working with these animals will always be of an intrinsic value that cannot be evaluated by a formula.

We call attention to the proved bulls in use during 1957. The 1,074 sires were divided as shown in the table on opposite page.

Proved bulls usually old . . .

The advantage of a proved sire is often offset by the fact that he is getting along in years before he is proved. This is amply borne out in the age distributions of sires in the table. The average age is 7 to 8 years, about as young as a sire can be proved under average herd operations.

Only 236 of the proved sires in use are 7 years of age. The average age is 7 years, and 350 sires of the 1,074 proved are in this age group. Seventy-four are past 10 years of age and 5 are past 14 years of age.

Because most of the sires are past 7 years of age when purchased, the turnover is fairly high. The average proved sire is good for 2 to 3 years either natural or artificial service. An abundance of data shows that whether used naturally or artificially, the average proved sire is through at about 10 years of age.

Cream of the crop . . .

The proved sires used in artificial breeding in 1957 were generally "the cream of the crop." Of the 1,074 sires used, 834 maintained or increased production of daughters over dams. The average sire used had an average of 13 daughter-dam pairs. The dams averaged 10,626 pounds of milk, 440 pounds of butterfat, and the daughters 11,304 pounds of milk, 477 pounds of butterfat on a 305 day lactation — 2x milking — mature basis (see table).

This is an increase of 678 pounds milk, 37 pounds of butterfat in favor of the tested daughters of these A. I. proved sires. It indicates that the upper level of proved sires is being utilized to the fullest.

Fire ant and screw worm can be controlled

Plans for an attack to eventually wipe out two of the most costly insects that plague agriculture in the south (the imported fire ant and the screw worm) have been developing between the U.S.D.A. and state agencies.

The attack already is underway against the imported fire ant, a pest that infests more than 20 million acres in Texas, Alabama, Mississippi, Louisiana, Florida, and Georgia. Isolated infestations exist or have been eradicated in North Carolina, South Carolina, Arkansas, and Tennessee. The imported fire ant is harmful to crops, livestock, and humans.

Most effective time for field operations against the fire ant is from November to April.

To stamp out the fire ant, which may take three years or more in a given area, all infested lands will need to be treated. Insecticides effective against fire ants include dieldrin and heptachlor. Chlordane is effective but requires twice as much to kill the pest and has less residual value under most conditions. Application will be by aircraft, motorized ground equipment, and hand applicators.

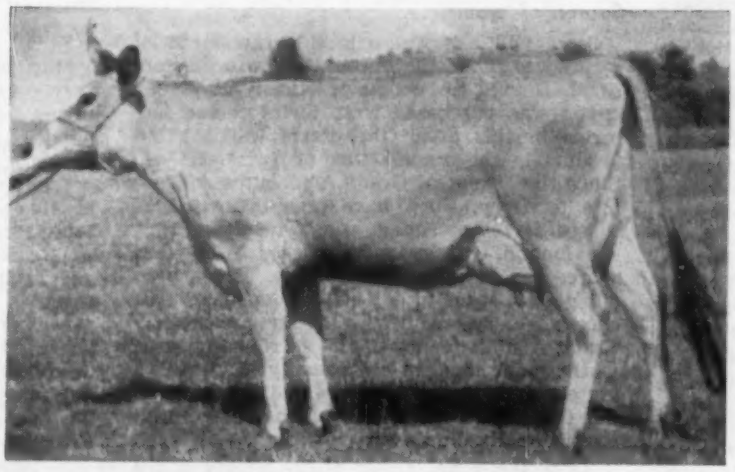
The screw worm, a pest that causes heavy losses among livestock and wildlife, will be attacked in Florida and parts of Georgia, Alabama, and South Carolina. Male screw worm flies sterilized by gamma rays from radioactive cobalt will be used. **When normal screw worm females, which mate only once, mate with sterile males, their eggs do not hatch.**

Before an all-out screw worm campaign can begin, mass rearing facilities for flies must be prepared. With both the screw worm and the fire ant, quarantine will be needed to protect areas cleared of the pests.

John Hetts dies

John Hetts, Wisconsin's oldest member of the National Holstein Association in years of affiliation, died at his Fort Atkinson home January 2 at the age of 78. The "Apostle of the Admirals" still owned some 100 head of Holsteins at the time of his death. A memorial in his name is being established.

Top Jersey record



Charming Susie of W. S. (Very Good) has completed a record that makes her national champion junior 2-year-old on 2x, 305 days. Beginning at 1 year, 10 months of age, she produced 12,940 pounds of milk and 788 pounds of fat.

Both her sire and dam are descendants of one cow, which was the foundation animal for the herd of Austin W. Warner, Carlton, Ore., who bred and owns "Susie."

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by Russell Myers and Fred Kuckuck

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THE work involved in the buttermaking profession is quite varied. First, it is necessary to be able to receive and check the milk and cream for quality and cleanliness. The buttermaker should be able to run the Babcock test for butterfat content, run sediment tests, and all other laboratory tests on the product.

After the cream is dumped into the pasteurizer or prepared to be run through the flash pasteurizer, the buttermaker must understand the pasteurizing process completely.

After pasteurizing, cooling, and holding, he must churn the butter from the cream and make the kind of butter that the public has the right to expect; that is, nothing but **top-quality** butter.

In addition to these prime duties, a good buttermaker is trained to take care of a good share of the maintenance of the machinery in a creamery. Besides all of these duties, it is very beneficial if the buttermaker has a pleasing personality and can meet and talk with patrons, customers, and the visitors who like to come in and see how butter is made.

Equipment needed . . .

To make good butter in a plant the size of ours (we produce from 1½ to 2 million pounds of butter per year), it would be necessary to have the following equipment: In the intake room we have a 5-can-per-minute rotary can washer, a 500-pound scale, and a stainless steel 3-can capacity dump can. Off the intake room is the laboratory where we test milk and cream with the main piece of equipment being the centrifuge, plus plenty of hot water and the necessary glassware to run milk and cream tests.

In the boiler room we have a 50-horsepower steam generator, which is a water-tube type of boiler. Our refrigeration system is housed here, also. This includes 20 tons of refrigeration and a large sweet-water holding tank, used to cool our cream after pasteurization. In our churn room is located four 600-gallon cream pasteurizers and a 650-gallon capacity churn. This churn will handle the contents of one of the pasteurizers and will churn out around 2,000 pounds of butter from each vat of cream.

After the cream is received in the intake room, weighed, sampled, and dumped into one of the pasteurizing vats, the cream is heated (pasteurized) to 175 degrees and held for 30 minutes at that temperature. This extreme heat kills all the unwanted bacteria in the cream so the butter will have the best keeping qualities. (We have stored our butter for months and it has come out of storage with as fresh a flavor as when it was put in.)

After the heat treatment, the cream is cooled to about 64 degrees with water circulating through the coil in the center of the pasteurizer. When the cream is down to 64 degrees, we turn the sweet-water into the coil and cool the cream to about 46 degrees or to a temperature that will allow the cream to be churned for 45 minutes before it breaks into butter.

After pasteurizing, the cream is pumped into the churn the next morning and is churned until the butter granules form and become the size of wheat or small kernels of corn. The buttermilk is drained off and the butter is washed twice with pure, cool, rinse water.

After the washing and draining, salt is added to the butter at about the rate of 2 pounds per 100 pounds of butter, or 2 per cent salt. The butter is thoroughly worked so that no moisture is visible to the naked eye. After the proper tests are made to determine the exact composition of the butter, as to butterfat content, moisture content, salt content, and so forth, the butter is either taken from the churn and run through our butter-molding and wrapping machine or it is put into 60-pound bulk butter boxes for shipment and sale to outside markets.

Source of cream . . .

Some will ask where is this raw material secured to make the butter that we manufacture? It used to be that practically all of our cream was purchased from Swiss cheese factories in this area (the cream was the by-product in the manufacture of Swiss cheese). Since the advent of Grade A procurement into this territory, there have been estimated 60 cheese factories closed. As a result of this, the amount of cream purchased from that source has dwindled considerably. It has been our good fortune to be able to supplement this cheese factory cream with surplus cream from Grade A milk plants in the surrounding area to the point that we are actually manufacturing as much butter as we ever did in spite of the fact that the number of cheese factories is continually diminishing.

As to the improvement of the quality of the cream we purchase from the cheese factories, we will have to give thanks to the State Department of Agriculture and its new cream grading program. This has helped to improve the quality of the cream considerably. Practically all of the larger factories have mechanical cream coolers now and that is the biggest step in the improvement of this cream. We take sediment tests twice a month of the cream taken in and keep quality records on all the factories. The biggest single factor, however, in the improvement of the cream quality is that the State of Wisconsin sends out men into the field to check quality and to make suggestions on how to improve the cream.

The method or procedure of becoming a buttermaker is pretty much the old-fashioned apprenticeship training method. It is similar to the "on-the-job training programs" that were instituted after World War II for the returning veterans.

Here is how it works: If a young fellow is interested in becoming a buttermaker, he hires out to a creamery and works through all the departments under the leadership and guidance of the buttermaker, who is licensed by the State of Wisconsin. After a year of this training, the buttermaker can recommend the young man for a buttermaker's permit. A State dairy inspector will call and observe the young buttermaker at work and if his work is approved, he is given a written examination on the different phases of the work. Upon completion of the examination and found qualified, the applicant is issued a permit to engage in buttermaking. After a year of working under this permit, subject to periodical inspections by the state inspector, he is then issued his buttermaker's license.

We like to make butter . . .

Most buttermakers like their work because they get personal satisfaction out of manufacturing a food product that is so wholesome and nutritious and which is used everyday by most people.

We like the work because it isn't like assembly-line production work. We are doing something different from day to day and from season to season. This breaks up the monotony and drudgery that is found in some occupations.

During the last war, when butter really "went to war" along with our men and bullets, we felt we were engaged in a very vital and important industry. There is no need for telling how vitally important butter was at that time to the community, state, and nation.

In summarizing: Anyone who takes pride in his own workmanship and who is willing to spend 8 hours a day at his job that will pay from $4,000 a year and up (depending on the size of the plant), would do well to give this profession careful consideration. **THE END**

The authors are manager and buttermaker, respectively, at the Monroe Dairy Company, Monroe, Wisconsin.

Take this exam . . .

BULLS must be handled carefully. Some 25 per cent of all farm accidents involved animals.

TAKING CHANCES may mean trouble. A slip here could mean a permanent injury or death.

it may save your life!

Over 1,000,000 farm people were injured last year—many in auto accidents, but nearly 8,000 died in farm accidents.

by Ernest C. Grant

ALMOST every other major occupation, except mining and construction, has a better safety record than farming. If agriculture had been as safe as manufacturing, some 3,000 lives would have been saved last year.

Farm machinery with its cogs, belts, rollers, knives, and pulleys accounts for some 30 per cent of the farm accidents. Falls downstairs, from ladders, on slippery places, off moving vehicles, and from tripping over objects on the ground and floor cause about 12½ per cent. Farm animals cause 25 per cent; lightning 6 per cent; burns and explosions another 6 per cent; and miscellaneous causes account for the rest.

Accidents, even when not fatal, are painful and expensive. They bring about doctor and hospital bills which come high these days. Most accidents are caused by carelessness.

Every day we read news items like these. Mr. Albert _____ is in serious condition after having his left arm amputated at the elbow. This was the result of an accident when he caught his arm in a hay baler.

Mrs. Fred _____ suffered a brain concussion when she fell from a load of hay while helping her husband in the field.

Mr. John _____ was kicked by a cow on his farm yesterday. His left leg was broken.

Ralph _____ Jr., son of Mr. and Mrs. Ralph _____ Sr., is in fair condition at the _____ Hospital today after being wounded in the leg yesterday when he accidentally shot himself while playing with his father's shotgun.

Will it ever stop? Not until all farmers think and practice safety.

If you can truthfully answer most of these questions with a "yes", you are safer than the average. There are just 50 of them. Give yourself 2 for each "yes" and see how well you and your farm rate.

Safety around animals . . .

1. Do you let animals know you are near before touching them? ____
2. Do you dehorn the bull while he is still young? ____
3. Do you have a ring in his nose and lead him with a staff fastened to the ring? ____
4. Do you have a strong pen for him and keep him in it? ____

Electricity . . .

5. Are electric switches, wiring and equipment kept in good repair? ____
6. Are electric fence control boxes of the "approved" type and properly installed? ____
7. Are the lightning rods and wire fences properly grounded? ____
8. Do you avoid seeking shelter under trees during a thunderstorm? ____

Stairs and ladders . . .

9. Are stairs well lighted? ____
10. Is there a hand rail? ____
11. Are all the steps strong and in good repair? ____
12. Are ladders strong, with no weak, broken, or missing rungs? ____
13. Are ladders set carefully on level surfaces when being used, and laid down when not in use? ____
14. Do ladders on silos start well above the ground and out of reach of children? ____

Housekeeping . . .

15. Do you keep boards (with nails) and other trash picked up? ____
16. Do you keep forks, shovels, and small tools hung in place instead of on the floor where people may fall over them? ____
17. Are axes and sharp tools kept where no one can come in contact with them accidentally? ____
18. Are stairs kept free from hay, tools, and other objects? ____

Buildings and grounds . . .

19. Are floors of lofts strong and tight with no loose boards? ____
20. Are all working platforms strong and tight? ____
21. Are buildings and yards adequately lighted? ____
22. Are open ditches, wells, and pits covered securely or fenced in? ____

Machinery and tools . . .

23. Are machines operated only by trained operators? ____
24. Are machines operated only at recommended speeds? ____
25. Is machinery oiled, greased, and adjusted only after it has been stopped? ____
26. Are guards for cogs, wheels, and belts kept in place? ____
27. Are belts put on and taken off only when pulleys are not in motion? ____
28. Do you walk around machines rather than over moving belts? ____
29. Are steps to tractors, wagons, and machinery kept clean and free from grease and oil? ____
30. Are rough and tippy places avoided while loading vehicles? ____
31. Are handles of mauls, axes, and hammers sound and tight? ____

You . . .

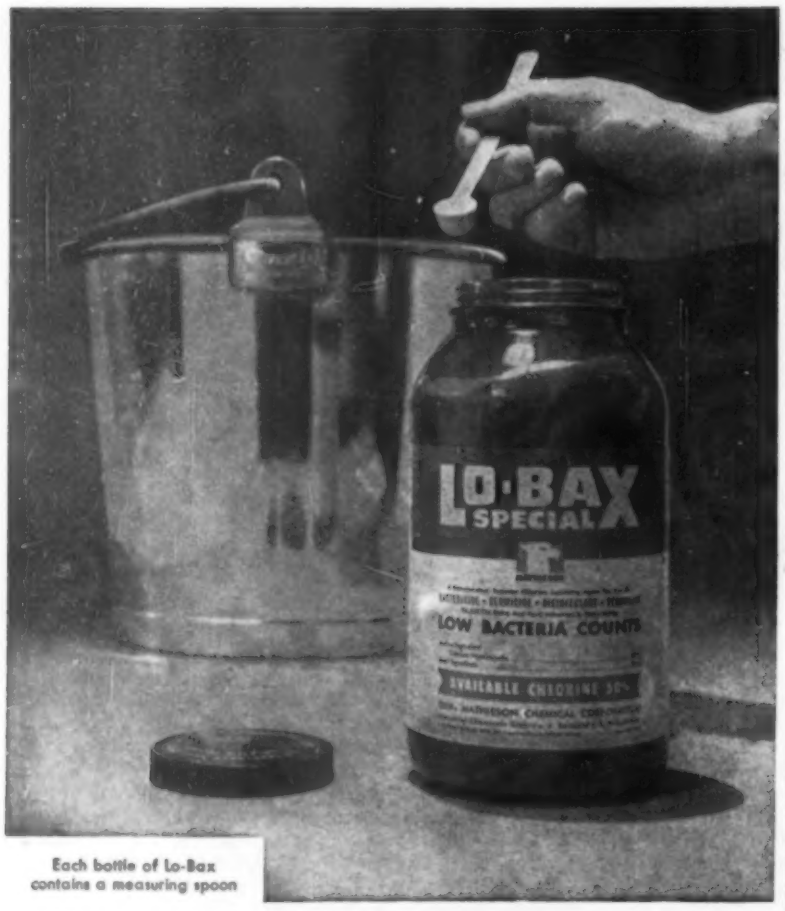
32. Do you plan your work so that you have ample time to do it? ____
33. Do you concentrate on the job at hand instead of doing one thing while thinking of another? ____
34. Do you avoid lifting extremely heavy objects? ____
35. Do you avoid lifting while on uneven or slippery surfaces? ____
36. Do you use the "bended legs and straight back" method of lifting? ____
37. Do you keep machinery and tools in good repair? ____
38. Do you control your temper in annoying circumstances? ____

In the home . . .

39. Do you avoid having highly-waxed slippery floors? ____
40. Do you avoid turning off and on electricity while your hands are wet or while in a bath tub? ____
41. Are stairs free from objects "you expect to carry up next time"? ____
42. Are matches kept in tin or glass containers and out of the reach of children? ____
43. Is medicine kept out of the reach of children; is it properly labeled; and are labels read before the medicine is taken? ____
44. Are toys and other objects kept off the floors where people may trip over them? ____
45. Are sharp and pointed tools kept out of the reach of children? ____
46. Are safety rules observed when using such tools? ____
47. Is dry cleaning done only out of doors or with the use of non-inflammable dry cleaning fluid? ____
48. Are safety precautions used by everyone who smokes?
49. Do you avoid pyramiding chairs and boxes to use instead of a step ladder? ____
50. Are guns always stored unloaded, and are they kept where children cannot get them? ____

Your Total Score ____

THE END



Each bottle of Lo-Bax contains a measuring spoon

a little **Lo-Bax**

goes a long way

in protecting milk quality

Wherever bacteria threaten milk quality, the chlorine sanitizing action of Lo-Bax Special or LoBax-W (with wetting agent) gives quick and effective kills to minimize spoilage and rejects.

Just one-half teaspoonful of fast-dissolving Lo-Bax Special* gives two gallons of rinse solution for gentle, positive protection of hands, cows' udders, milking machine parts, utensils and other danger spots.

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OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

Iowa Brown Swiss sets record

Meadow View Jerami M.

IOWA has a new butterfat production champion. Meadow View Jerami M., owned by Clyde Monson and Son, Gowrie, completed a 365-day record in which she produced 28,052 pounds of milk and 1,211 pounds of butterfat.

This record surpasses the previous high butterfat mark for Iowa set in 1955 by Constance Korndyke Veeman, a Holstein owned by Ronald Chapman, Ruthven. Her 365-day total was 28,874 pounds of milk and 1,143 pounds of butterfat.

The Monson cow, classified Excellent, was milked twice daily. Her 305-day record on H.I.R. totaled 24,699 pounds of milk, 1,063 pounds of butterfat. While this 305-day record is exceeded in the Brown Swiss breed by Kilravock's Countess, owned by Louis Ripley, Litchfield, Conn., the Iowa cow's record is the highest 365-day, 2x record received at the national Brown Swiss Association office to date.

The new Iowa champion ate about 30 pounds of concentrate daily during her record. This included 20 pounds of a home mixture of 900 pounds corn, 550 pounds oats, 175 pounds soybean meal, 150 pounds linseed oil meal, and 150 pounds bran. She also received 10 pounds of a commercial dry and freshening feed each day and about 4 pounds of beet pulp.

Her roughage was mostly corn silage, fed free-choice. She also received a limited amount of excellent alfalfa hay. Alfalfa silage was fed from June through September.

The Monson's use a loose-housing system. Jerami goes into the barn and is milked with the first half of the herd and stays in the stanchion to eat grain while the second "shift" is milked.

She spent about three hours in the stanchion each day. She was never separated from the herd or received special care other than getting more feed than the rest.

Milked at 5 o'clock sharp, morning and evening, Jerami was milked by machine throughout her record.

Monson's 34-cow herd averaged 11,663 pounds of milk and 516 pounds of butterfat per cow this year. The herd has been on H.I.R. continuously since 1939. The elder Monson, a member of the National Board of the Brown Swiss Cattle Breeders' Association from 1946 to 1952, has been president, secretary, and a board member of the Iowa organization. His son, Bernard, was active in 4-H work for eight years. Since completion of military service, he has been managing the herd and has been serving as secretary of the Iowa Brown Swiss Cattle Breeders' Association.

The new butterfat champion's granddam was one of his 4-H heifers that was junior champion at the Iowa State Fair. Jerami's sire is Lee's Hill Keeper's Mainstay, a son of Marina of Lee's Hill. Jerami's dam is Meadow View Jinx D that produced 11,643 pounds of milk, 525 pounds of fat as a 5-year-old in 305 days.

Farm population drops

An estimated 20,396,000 persons were living on U. S. farms in April 1957, a drop of 1,861,000 since 1956, according to recent estimates by the Bureau of the Census, Agricultural Marketing Service.

The change between 1956 and 1957 is one of the largest recorded for a single year, it was noted, part of which may be accounted for by sampling variability. The farm population is now 4.7 million lower than in 1950.

Lowered requirements for manpower in agriculture, increased opportunities for employment in nonagricultural industries, and the unfavorable disparity in certain regions between farm and nonfarm incomes are factors to which the trend is attributed.

Answers to "What's your dairy I. Q.?" quiz (page 80)

Here are the experts' answers. Consider yourself "an expert" if you scored 10-12, "average" if you scored 7-9, and "watching too much TV" if you scored 6 or lower.

1. **(a)** Figures just released by the U.S.D.A. showed consumption was up 4 pounds last year to 356 pounds on a milk equivalent basis.
2. **(d)** Butter consumption last year stood at 8.8 pounds per person and margarine at 8.1 pounds.
3. **(b)** A recent study by the Foreign Agriculture Service showed these per capita figures: Ireland, 1,382 pounds; United States, 582 pounds; Italy, 303 pounds; and Netherlands, 508 pounds.
4. **(d)** C.C.C. purchases of slightly over 5 billion pounds were about 4 per cent of marketed production.
5. **(b)** We don't have the exact figures for 1956 yet, but it will be about 4 per cent. However, in Texas where it has been produced for some time, it makes up nearly one-half.
6. **(a)**
7. **(a)** The government does not actually support milk prices. It supports manufactured product prices at a level which will hold manufacturing milk prices at the desired percentage of parity. This was estimated as 83 per cent as of early 1957.
8. **(d)** The 1956 figure by the U.S.D.A. was 65 cents.
9. **(a)**
10. **(d)** A U.S.D.A. report, "National Food Situation," reported recently that per capita consumption of these foods in 1956 relative to 1947-49 was as follows: Fluid milk and cream, 99 per cent; chicken, 127 per cent; butter, 87 per cent; and frozen vegetables, 250 per cent.
11. **(a)** The dairy industry generally holds to city ordinances, although some county ordinances are in operation. The U.S. Public Health Service provides model ordinances, but, in general, the state and federal governments assist the local governments.
12. **(c)** A recent U.S.D.A. survey set this at 17 cents with about one-half of this going for fluid whole milk.

Kansas dairy day

With the discontinuance of the Kansas Farm and Home week, a special Dairy Progress Day has been scheduled for Wednesday, January 29, at Kansas State College, Manhattan. The program will include a review of latest research findings and talks on such subjects as causes of breeding troubles, milk pricing systems, control of milk flavors, and new ideas in dairy cattle housing and equipment. On the two days prior to Dairy Progress Day, special meetings will be held. The Kansas Inter-Breed Dairy Cattle Council will meet January 27, and the dairy cattle breed associations will hold their annual meetings January 28.

Sign of the Times

THE BIG SWING is to REGISTERED HOLSTEINS

Wherever cows are milked, the big swing is to big, rugged REGISTERED HOLSTEINS.

REGISTERED HOLSTEIN owners the country over are finding more milk per cow the practical key to more milk and more profit per acre . . . per man-hour . . . per dollar invested.

Tailored to today's needs by centuries of breeding and selection, REGISTERED HOLSTEINS have the size and the capacity to handle modern big-tonnage yields of pasture, silage and hay . . . the inherent ability to convert grass to milk at top efficiency.

And the moderate-fat milk which REGISTERED HOLSTEINS produce so abundantly has built-in marketability . . . is in ever-increasing demand on free-choice markets everywhere.

Keep in step with the trend of the times in 1958 . . . plan in terms of bigger dairy profits . . . join the big swing to REGISTERED HOLSTEINS.

Registered HOLSTEINS *Breed of the Times*

fit the farm...fit the market

THE HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA

BRATTLEBORO, VERMONT

SPECIAL OPPORTUNITIES

— Where Buyer and Seller Meet —

The rate for advertising in this department is 30 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ##, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

STOCKMEN'S SUPPLIES

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

MASTITIS TESTERS. Send for free sample and literature. DAIRY EQUIPMENT COMPANY OF OHIO, INC., Pataskala, Ohio. 3-*

HORN WEIGHTS. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.25 postpaid, includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 24-*

VETERINARY PRODUCTS direct to you at a savings. Write for free 22 page catalog. ANIMAL HEALTH ASSOCIATES, Box 774, St. Joseph, Missouri. 21-*

GORDON'S TEAT SOLUTION—It is tops for injured or spiders in cow's teats. Simple and easy to use, just insert. Guaranteed. Postpaid $1.00. W. G. INNERST, Cortland, N. Y. 21-10

GORDON'S MASTITIS REMEDY — Our best. Contains 500,000 units Penicillin G 225 mg. Streptomycin with Sulfas added. Simple and easy to use by just inserting applicator tube in the udder. While they last. Supply limited. Postpaid $6.25 dozen. W. G. INNERST, Cortland, N. Y. 21-10

CATTLE MARKERS

LARGEST, most complete line of cattle markers and livestock supplies. Free catalog. NASCO, Fort Atkinson, Wisconsin. 14-*

COLORED NYLON, aluminum and brass. Send for catalog. GEO. P. CREUTZBURG & SON, Drawer 152-H, Wayne, Pennsylvania. 18-*

FREE illustrated price list world's finest cattle markers 50c each. Halters and other supplies. Save money. Write today. MAC-RA COMPANY, P.O. Box 1409-H, Santa Barbara, Cal. 7-*

DAISY CATTLE MARKERS, solid brass tag and brass-plated chain for horns or neck. Write for free catalog. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 10-*

FARM EQUIPMENT

COW STALLS, pens, steel windows, hay carriers, steel fence post, post pullers. Immediate shipments. STANDARD EQUIPMENT, INC., Bel Air, Maryland. 10-*

ALLIS CHALMERS, FARMALL, JOHN DEERE and Ford owners, for lowest prices on manure loaders write: VAUGHN MFG. CO., Dept. B., Box 349, St. Peter, Minnesota. Buy direct and save 40% or more. 21-*

BUY TRACTOR PARTS direct at dealer's discounts. America's largest combination stock-guaranteed new and rebuilt parts. Free 1958 catalog. CENTRAL TRACTOR PARTS COMPANY, Des Moines, Iowa. 1-spl.

DEPRESSION PRICES. WE SELL CHEAP. Save 75% off new and used tractor parts, crawlers and wheel tractors. 190 makes and models. 1958 catalog ready. Send 25 cents refundable. SURPLUS TRACTOR PARTS CORPORATION, Fargo, N. Dak. 1-12

BARN HAY DRYERS—Heal's "Controlled Air" system makes brightest green alfalfa at lowest cost. Retains protein, nutrients costing hundreds to replace. Farm Management Association figures prove increased profits $50 per cow, upward. Efficient, positive drying, any depth. Fast, easy harvest. Results guaranteed. Salesmen wanted. Free folder shows need, plan for "Controlled Air." HEAL COMPANY, 203 Wern Building, Waukesha, Wisconsin. 1-4

BUY SURPLUS JEEPS, Tractors, farm implements, winches, tools, pumps, hydraulics wholesale direct from Government. List and procedure $1.00. Surplus Center, Department 10, Etters, Pennsylvania.

DAIRY EQUIPMENT

SURGE, around the barn pipe line, and four units, like new. W. D. HEYNE, Uehling, Nebraska. 1-2

COMPLETE OUTFIT for processing grade A milk, will handle to 500 gallons daily. Includes International delivery truck. All in A-1 condition. $2500.00. BOX 17, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

PORTABLE GLOBE MILKER used only two years. JOHN P. LITWILLER, Route 1, Box 13, Hopedale, Illinois.

BULK COOLER USED. 250 gallon Delaval Self contained. 2 years old. $1250 F.O.B. E. H. CRULL, Evansville, Wisconsin. Phone 669R4.

USED CAN COOLERS, 4-20 can, top or side loaders. Also 10 gallon cans. Truck loads or less. Priced F.O.B. your station. E. H. CRULL, Evansville, Wis. Telephone 669R4. 2-2

BULK MILK TANK, Mow Hay drier, 260 gallon T-20 Zero vacuum tank, direct expansion Kelvinator unit, 22 months, ⅓ price. Heal controlled air system motor, fan, ducts complete, used 2 seasons, ½ new cost. R. H. FAULKNER, Route 1, Box 252, Zion, Illinois.

SILOS

SILO UNLOADERS, P & D silo unloaders and auger bunk feeders, feeds 6 to 9 tons an hour. Hard packed or frozen silage no problem. Satisfactory work guaranteed or money back. Also plastic silo and stack covers. P & D SALES CO., Plainfield, Ill. 18-*

FORAGEMASTER — SILOS. Liberal cash discount for early orders. Write for information. ROWELL, INC., 752 Vandalia Street, St. Paul 14, Minnesota. 24-*

HAY AND BEDDING

BALED HAY, consisting of Clover, Alfalfa and Brome grass. Loaded on car, $14.00. LINK BROTHERS, INC., Minong, Wisconsin. 1-2

GRADED DAIRY ALFALFA, clover, other top grades hay. Quality, weights guaranteed. ART CALLARI HAY CO., Upper Sandusky, O. 16-*

DAIRY HAY-Carloads only. Alfalfa, clover and mixed. Ask for delivered prices. HARRY GATES, Jackson, Michigan. 17-12

FERTILIZERS

GOLDEN-GLO highest test Tennessee powdered rock phosphate available for immediate and future delivery. Quality, analysis guaranteed. Dealers wanted. EATON-MANN PHOSPHATE COMPANY, Joliet, Illinois. 22-12

PHOSPHATE for less—using Arrow Brand finest-ground, natural Rock Phosphate. Non-acid. Quick results. One application keeps soil phosphorus-rich for years. Write or phone for prices in carlots, trucklote, or "spreading service." Dept. HD. ROBIN JONES Phosphate Company, 204-23rd Ave. N., Nashville, Tennessee. Phone Cypress 8-5547—established 1902. 19-12

SEEDS AND PLANTS

BERRY'S NEW IMPROVED Gro-Coated Brand, a Registered Trade Mark, means greater seed savings per acre for you this year. This original exclusive development now has CM-957 added. Berry's offer new Alfalfa Blends for every purpose, new mixtures and newest varieties. Prices as low as $17.40 a bushel on Alfalfa; $7.80 on Sweet Clover; $22.80 on Red Clover; all freight prepaid or with freight allowances and quantity discounts. 150 different farm seed grades and varieties to choose from, offered direct to you at wholesale. Write for big free catalog, samples and price list today. We guarantee to save you money and give you satisfaction. BERRY SEED COMPANY, Box 455, Clarinda, Iowa. 1-4

FARMS FOR SALE

ALABAMA Blackbelt cloverland dairies, no snows, twelve months grazing, $6.33 milk, write us your requirements. ERNEST F. RANDALL, Realtor, Box 368, Selma, Ala. 11-*

WISCONSIN FARMS; located in Walworth County, the Nations' leading dairy area. Send for free catalogue. THORNTON REALTY CORP., Elkhorn, Wisconsin. 23-*

CHOICE 160 ACRE Dairy Farm near Ft. Collins, Colorado. A well improved ideally located dairy farm with an A-1 water right. Annual income from milk sales, $65,000.00. Now operated with 114# base. Classification average rating on entire herd 84.7. New dairy barn, 36' x 100' with 20 stanchions. Good corrals and sheds. Large owners modern residence, and good modern tenant house. Owner will sell part of the dairy herd and milking equipment to purchaser. A rare opportunity to acquire some top rated registered Holsteins. Farm favorably priced at $80,000.00. VAN SCHAACK LAND COMPANY, 624 17 St., Denver, Colo.

240 ACRE FARM in Central Wisconsin. Has two sets of buildings, three barns, one new in 1957. 200 under plow. On concrete highway. LEN GEHRKE, Loyal, Wisconsin. 1-2

WHY RENT? Pay for this with 50% of milk income. 210 acre farm, 200 cultivated, our top farm. 2 apartment home, bath, automatic heat, garage attached. Barn, 160 foot, barn cleaner, 3 large silos, large line machinery including 3 large tractors. 50 milk cows, milk income about $15,000 plus other income. 85 head of cattle total; one of the finest all Holstein herds in the state. $300 per acre with cattle, machinery and feed thrown in. $20,000 down payment, balance on 50% milk assignment. Other 160 acre farms with cattle, machinery and feed ready to go, as low as $3000 down payment. Write, FLOYD JOHNSON, Broker, Marshfield, Wisconsin. 2-*

ONLY $6000 DOWN takes beautiful all modern home on 233 acre farm. Other good buildings. Near good fishing lakes. Only $64.38 per acre or $15,000. Favorable terms. BAKER LAND & TITLE COMPANY, Land Specialists since 1874, St. Croix Falls, Wisconsin.

VIRGINIA DAIRY AND CATTLE farms priced to sell, for details write: JOEL M. COCHRAN, Realtor, 414 East Jefferson Street, Charlottesville, Virginia. 2-6

500 ACRE DAIRY for sale or lease, located in southeast, mild climate, productive soils, modern improvements, 200 cow herd, new parlor, bulk system, average annual net income $197 per cow. Excellent opportunity for partnership operation. $40,000 capital necessary. BOX 16, care Hoard's Dairyman, Fort Atkinson, Wis.

160 ACRES, 155 tillable. 120 foot barn. 35 foot wing, all steel. New tool shed, 34x60, steel, new hen house. Modern home. Grade A bulk milk house. Waukesha County. Good location. EUGENE GERAGHTY, Agent, Route 1, Franksville, Wisconsin. Phone: GA 5-5682.

FOR SALE OR TRADE for farm in the South, an 80 acre, Grade A, Anglaise County dairy farm, all in alfalfa. Nine room strictly modern home and garage 56 X 60. Barn, 3 stall milking parlor, 14 X 16 milk house, 10 X 35 cement silo, poultry house, brooder house, $5.00 for 3.5 November milk. Close to schools, churches, on hardtop road. Contact owner, A. O. MITCHELL, Rt. 4, Wapakoneta, Ohio.

120 ACRE FARM equipped. Modern residence, furnished. 11 miles University Florida, school bus, mail route, telephone, electricity, state highway. $26,000. M. NELSON, Route 2, Box 354, Gainesville, Florida.

FARMS FOR SALE

STROUT, SPRING CATALOG! New. Just Out! Mailed free, 34 states, coast-to-coast. Around 3000 bargains. World's largest: 57 years' service. STROUT REALTY, 7-TF South Dearborn, Chicago 3, Illinois. 2-3

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor, John H Hitt, Associate, Culpeper, Virginia. 7-*

550 ACRES 17 miles from Augusta, Georgia, 300 acres in crops and pastures, balance in growing timbers Nice home, tenant house, dairy, barns, etc. Priced right at $35,000.00. ½ cash, balance terms. Write for pictures and full details. BARRETT & TROTTER, Realtors, 406 Eighth Street, Augusta, Georgia.

BUSINESS OPPORTUNITIES

BUY U. S. GOVERNMENT SURPLUS. Wholesale prices! Illustrated catalogue free. BOX 22E53, Thomasville, Pennsylvania. 2-3

SALESMAN WANTED

INCREASE PRESENT INCOME. Build growing sideline, full time business. No investment. Farmers, Agents, Dealers. Take orders for Campbell's Gro-Green Liquid Fertilizer Concentrates. Free sample, sales kit. CAMPBELL CO., Rochelle 326, Illinois. 23-8

MAKE $75 UP WEEKLY. Full or part time. Take orders for America's largest selling liquid fertilizer. Used by farmers since 1946. Liberal profits. No investment. Write "NACHURS" PLANT FOOD COMPANY, 524 Monroe Street, Marion, Ohio. 1-8

AUCTIONEER SCHOOLS

LEARN AUCTIONEERING. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 5303D4, Kansas City, Missouri 12-*

LEARN AUCTIONEERING, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

HELP WANTED

EXPERIENCED DAIRYMAN to take charge of eight-stall milking parlor operation, two time milking. Thoroughly experienced with feeding and general care of cattle. Able to handle help. Splendid opportunity for the right man. BOX 998, Care Hoard's Dairyman, Fort Atkinson, Wisconsin. 1-2

HERDSMAN for Jersey herd in southwestern Ohio. Modern facilities throughout. Good wages. Modern house. CHARLES GUARD, Route 2, Lebanon, Ohio. Telephone 32956.

A SINGLE MAN For general farm. Experienced tractor work. BOX 12, Care Hoard's Dairyman, Fort Atkinson, Wisconsin. 2-2

WANTED, WORKING HERDSMAN for 80 cow Holstein herd producing Grade A milk, in Southern Minnesota. Modern home and conveniences. Excellent salary. No field work. BOX 13, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

EXPERIENCED MARRIED MAN for large dairy farm near Elkhorn, Wisconsin. Modern eight room house, furnace, bath. Near church, store and schools. Could use man with son old enough to help. BOX 18, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED, EXPERIENCED DAIRYMAN or herdsman for Holstein herd of 100 cows. 5 cow Surge parlor and pipeline with bulk tank and electrobrain. Excellent house with top wages. JAMES COOK, Lowell, Michigan.

SINGLE MAN. Permanent position for herdsman with registered Holsteins. Electric milkers, bulk tank and latest farm machinery. Modern home. Athlone Farms. Apply to T. E. COURTNEY, De Kalb, Illinois. Phone: 6-4811.

WANTED, EXPERIENCED and Reliable single man on large modern Registered Guernsey dairy farm in northern Illinois. Furnish references and experience. WINDEMERE GUERNSEY FARM, Ottawa, Ill. Phone 2978W-2. 2-2

HERDSMAN AND TEST COW MILKER for a top small herd of Registered Holstein cows. Must be experienced and willing to work. For such a man, we will pay top wages, good living conditions and a chance for advancement. An opportunity of a life time for the right man. State age, number in family, and references in first letter. BOX 14, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

MARRIED OR SINGLE man as assistant herdsman for northern Illinois farm. Modern housing furnished. Give references and wages wanted in first letter. BOX 19, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 2-2

HERDSMAN-MANAGER, 200 acres Lake Geneva, Wisconsin area. Two-man operation. Fine purebred Holstein herd. A-1 machinery. Very best living and working conditions. Top salary and bonus, or will consider shares. Replies treated confidentially. BOX 21, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

DHIA TESTER wanted to test in the Denver Milkshed 20 miles north of Denver in colorful Colorado, contact County Agents Office, Adams County, Brighton, Colorado.

MAN TO WORK in well established Artificial Breeding business inseminating cows. ROCK COUNTY BREEDERS', 425 South Ringold Street, Janesville, Wisconsin. 2-3

POSITIONS WANTED

WORKING MANAGER, 37, married, small family, lifetime experience in dairy, hogs, beef, crops, modern machinery wants managers position on modern farm by April 1, 1958 or later. Excellent references. BOX 92, Chaska, Minn.

SINGLE MAN, 27 years old, non alcoholic, sober, dependable, experienced Surge Milker Parlor and pipe line, also experienced artificial inseminator wants job as Herdsman with top herd of Registered Holsteins. Furnish references, available January 1, 1958. BOX 11, Care Hoard's Dairyman, Fort Atkinson, Wis.

MANAGER, HERDSMAN Wants position, beef, dairy, commercial cattle and hogs. Can handle men, machinery, crops. Honest, industrious, correct habits, middle age, married, no dependents. Available. Full particulars first letter. BOX 15, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 2-2

POSITIONS WANTED

CHORE MAN OR MILKER, 42, married, non-drinking. Lifetime experience with milking and dairy cattle. Top references. BOX 20, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

POULTRY—BABY CHICKS—DUCKS

HELM'S IMPORTED Danish Brown Leghorns Official Records 317 Points. Bigger bodied, larger eggs. ILLINOIS HATCHERY, Metropolis, Illinois. 1-6

RABBITS

RAISE ANGORA, New Zealand Rabbits or Mink on $500 month plan. Free details. WHITE'S RABBITRY, Delaware, Ohio. 23-*

SWINE

FOR SALE, top quality Wisconsin feeder pigs, 8-10 weeks old. All farmer raised around here, no runts. All veterinary inspected. Get your pigs from a licensed dealer and get toppers. CLARENCE ACKER, Middleton, Wisconsin. Phone Terrace 6-3451. 1-*

DOGS

SPORTSMEN: Worlds largest kennels offers 500 Bird Dogs, Straight Cooners, Combination Hounds, Beagle Hounds, Rabbit Hounds, Small Squirrel Dogs, Fox and Deer Hounds. Catalogue free. SMOKEY MOUNTAIN KENNELS, Cleveland, Tennessee. 1-2

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 16-*

REGISTERED BORDER COLLIE Puppies from imported working parents available. L. B. TOPLIFF, Route 1, Box 224, Libertyville, Ill.

SHEPHERDS, COLLIES. Outstanding Heelers, Watch Dogs. ZIMMERMAN FARMS, Flanagan, Illinois. 2-*

OF INTEREST TO WOMEN

LEARN professional cake decorating. Details free. DECO-SECRETS, Venice 34, Calif. 14-*

MISCELLANEOUS

NEED STATIONERY? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-*

DAIRY CATTLE

REGISTERED—Guernsey calves. K. V. FARM, Elkhorn, Wisconsin. 11-*

REGISTERED Holstein calves. D. L. CAVEY, Elkhorn, Wisconsin. 11-*

KEATING BROTHERS FARM offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone JOrdan 3-5905. 18-*

KENYON BROTHERS FARM serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls. T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone SHerwood 1-1818. 19-*

NORTHERN dairy cattle. Registered or select high grades. Direct from quality herds. R. F. CULLER, Amery, Wisconsin. 14-*

ATTENTION DAIRYMEN and cattle dealers. We can furnish you Holstein heifers to freshen this fall. Cows of all breeds. Let us know your needs. We can supply them. BOTTEMA FARMS, Bridgeport, Indiana, Plainfield 8266. 20-*

SOUTH WESTERN distributor of top northern dairy cattle fresh and springers. R. K. (BOB) MILLER, Guthrie, Oklahoma. Phone Butler 2-3435. 17-*

HIGH QUALITY Holstein and Guernsey Springers, yearlings, bred heifers and calves. Write or call for prices to J. W. and BILL GEURKINK, Baldwin, Wisconsin. Telephone 322 or 21F31. 11-*

REGISTERED Holstein cows, heifers. Certified, Accredited. PAUL VAN CLEVE, Littlestown, Pennsylvania. 2-*

HOLSTEIN cows and heifers with production, type and size from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

CANADIAN Registered Holsteins—Young vaccinated cows and heifers. Buy direct from the farms, Elgin County Holstein Breeders Club. DON SHORE, R.R. #6, St. Thomas, Ontario, Canada. 4-spl

HOLSTEINS—Large selection of choice springers and fresh cows and heifers. TB and Bang's tested. STANLEY BURNIDGE & SON, "Grand Hotel for Dairy Cattle," Elgin, Illinois. (Hotel accommodations). Established 1918. Also good selection at Claremore, Okla. branch — Phone Claremore 116. 1-24

CHOICE HOLSTEIN cows and heifers, all ages Vaccinated. T.B. free. Fieldman available, or will fill orders as directed. Whitewater Dairy Association. DEAN HARNDEN, Whitewater, Wisconsin. Phone Palmyra 398. 1-*

WISCONSIN'S FINEST High Production dairy cattle, cows and heifers, all ages. W. R. LEHMANN, Route 4, Watertown, Wisconsin; Hot Springs, Arkansas Branch: George Paul, Mountain Valley Route. 1-2

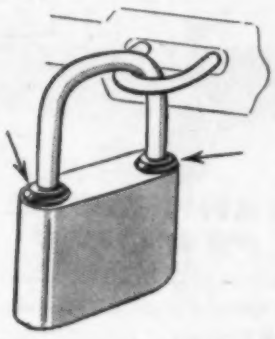
REGISTERED HOLSTEIN, AYRSHIRE cows and heifers, accredited, vaccinated. PEARSON BROTHERS, Avonsyde Farms, Waterdown, Ontario, Canada. 2-spl

BUY YOUR DAIRY HEIFERS from Wisconsin's largest dealers. Holsteins 16 to 17 cents per pound, Guernseys 15 cents per pound. If you need springing cows and heifers we can supply these also. LINK BROTHERS, INC., Minong, Wisconsin. 2-*

MORE SPECIAL OPPORTUNITIES ON PAGE 100

HANDY HINTS

FROST-FREE PADLOCK



To protect padlocks when they are exposed to the weather, we slip a couple of faucet washers over the round shackle.

Minnesota MRS. LEO KRITZECK

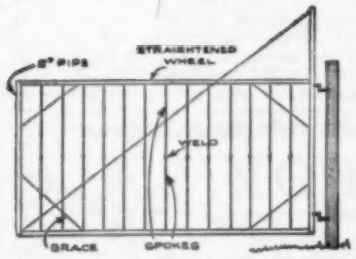
USE FOR CROSSCUT SAW

We found a good use for a discarded crosscut saw. We had our local blacksmith cut off the teeth of a section large enough for a tobacco ax. Two holes were made for ¼-inch bolts to attach to a handle. The blade was well sharpened on our grindstone and this ax far outlasted any other we had ever used. The high carbon steel content of the crosscut saw helps keep a sharp cutting edge for a longer time.

We also made a hoe from a section of the crosscut saw. The piece is welded to an old handle.

Wisconsin MRS. CLIFFORD LARSON

TWO WHEELS MAKE A GATE



A farm gate can easily be made in your farm shop with two old sulky hayrake wheels, a few feet of 2-inch pipe, and an electric or acetylene welder.

Cut the wheel rim at any point and all the spokes next to the hub. Heat the rim so that it can be straightened out. Weld together the ends of the spokes from both wheels. This forms the center of the gate.

The hinges are made from two pieces of 2-inch strap iron. Cut to fit a 2-inch pipe; then drill ¾-inch holes for lag screw hooks on corner post. Weld eye hinge to 2-inch pipe on end of gate.

With a diagonal wire brace for support, you have an inexpensive 14-foot gate that is easy to open and close.

For longer life, keep the gate painted with enamel paint.

Utah W. BROUGH

PERMANENT HITCH PIN

Weld a steel ring about three inches in diameter to the end of the hitch pin for easy handling and installation. Fasten a chain to the ring, and the other end of it to your tractor drawbar. This way you need never lose the hitch pin.

Minnesota ERNEST NELSON

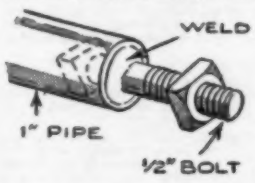
USE OAK FLOORING

To repair an old farm wagon floor, I just laid a hardwood oak floor across the old floor.

This could be done on a truck box floor, also.

Kansas FRANCIS H. SCHRICK

STRONG SPACER RODS



Make strong spacer rods for loading chutes, grain bins, and large self-feeders. If threads and nuts are required on both ends, we use discarded one-inch pipe with a half-inch bolt of the right length welded into each end. With a washer, this spacer will give you the strength that is needed.

Minnesota JAMES FABER

You are invited to send us handy hints which have proven valuable on your dairy farm. You will receive $5 for a well-illustrated handy hint accepted for publication. We pay $2 for a handy hint without a usable illustration.

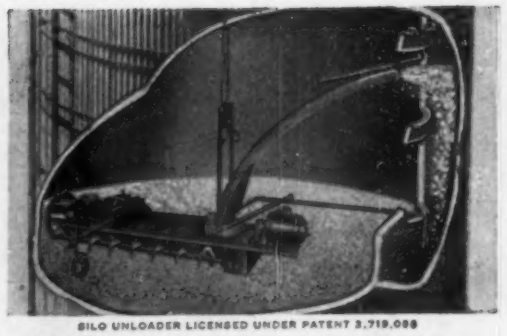
We encourage you to share your ideas with the rest of our readers.

Handy hints are preferred which involve farm machinery, buildings, and equipment needed on a dairy farm. If the idea works on your dairy farm, why not share it with 330,000 other dairymen?

Address:

Handy Hints Department,
Hoard's Dairyman,
Fort Atkinson, Wisconsin.

Planning to Modernize your farm? Interested in ways to save money, enlarge your herd, and make your life easier by mechanizing livestock operations? Write to Clay Equipment Corporation for free idea books for planning mechanized feeding, barn cleaning, milking parlors, crop driers.



SILO UNLOADER LICENSED UNDER PATENT 2,719,088

How to feed 20 head in 9 minutes

No more crawling up that icy chute, chopping frozen silage, and forking down unpalatable chunks your cattle won't eat.

Just flip a switch and let your CLAY SILO UNLOADER do the work for you. It doesn't matter if the silage is frozen solid. A CLAY unloader will still throw it down faster than you can cart it away.

Feed 20 head in 9 minutes . . . with the CLAY SILO UNLOADER and MECHANICAL FEEDER. And even more important, there will be no frozen chunks. Silage is cut into fine particles and fluffed up the way cows like it. They'll usually clean up every bit.

Clay Unloaders offer big advantages over other unloaders. They handle frozen silage . . . seldom need repair or adjustment . . . are easily moved from silo to silo. They fit all standard size silos, and your local CLAY Dealer offers fast, experienced service when you need it.

Free Planning Book. Make your work easier. Write for free idea booklet on Silo Unloaders. Other free booklets are available on Mechanical Feeding, Barn Cleaners, Milking Parlors, Crop Driers. Write to CLAY . . . *today.*

CLAY EQUIPMENT CORPORATION • 1870 Olive St. • Cedar Falls, Iowa

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. . . then you'll be happy to know how we have improved the hearing and relieved those miserable ear noises, caused by catarrh of the head, for thousands of people (many past 70) who have used our simple Elmo Palliative HOME TREATMENT. This may be the answer to your prayer. NOTHING TO WEAR. Here are SOME of the symptoms that may likely be causing your catarrhal deafness and ear noises: Head feels stopped up from mucus. Dropping of mucus in throat. Hawking and spitting. Mucus in nose or throat every day. Hearing worse with a cold. Hear — but don't understand words. Hear better on clear days. Worse on rainy days. Ear noises like crickets, bells, whistles, clicking, escaping steam or others. If your condition is caused by catarrh of the head, you, too, may enjoy wonderful relief such as others have reported during our past 20 years. WRITE TODAY FOR PROOF OF RELIEF AND 30 DAY TRIAL OFFER. THE ELMO COMPANY DEPT. SHR1 DAVENPORT, IOWA

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Farm Shop by Leo Roethe

Here are two items of special interest to all stockmen and dairymen.

Yellow neck strap with large, black, non-fade numerals on both sides of neck. Tough, pliable material; rot and crack-proof. 44-inch strap with brass buckle, 95 cents each; $10.95 per dozen. State number sequence desired.

New Tenite Cattle Identity tag with 40-inch nickel-steel neck chain. Jumbo numbers on bright background. Visible from a distance, non-fading. When ordering, specify numbers desired (1 to 999). State color (red, yellow, blue or white). Tag only, 65 cents. Tag and chain, $1.15; per dozen, $11.95.

Both the above items manufactured in our shops.

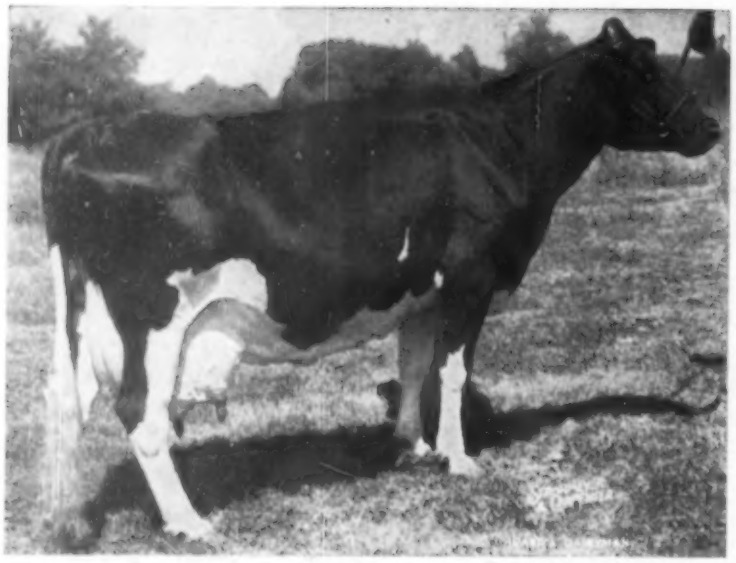
Over 5,000 Farm Items

NASCO catalog lists complete stock of farming supplies — all at a saving to you . . . many unusual products not available in stores.

Write for your *free copy* of Catalog No. 44.

NASCO Dept. 41 FORT ATKINSON, WIS.

Buy More U. S. Savings Bonds.



New Holstein 2x fat champion

A 9-year-old registered Holstein cow, Green Meadow Stella Pancha, owned by Green Meadow Farms, Elsie, Mich., is the new butterfat champion of the breed on twice daily milking.

In 365 days this cow produced 23,355 pounds of milk testing 5.7 per cent, or 1,333 pounds of fat.

The new champion, along with her sire and dam, were bred by Green Meadow Farms. Sired by Green Meadow Constellation, her dam is a daughter of Osborndale Ormsby Judge, former Green Meadow herd sire.

During her record-breaking lactation she received 18 pounds of a commercial 12 per cent protein fitting feed daily, plus 4 pounds of ground oats and some beet pulp along with all the good hay she would eat.

Pancha made a Michigan state record in 305 days as a 2-year-old and just previous to her new record she produced 1,112 pounds of fat on 2x. In seven lactations she has produced 126,433 pounds of milk, 5,639 pounds of fat.

Sales Announcements

February 10, 1958—Holsteins—J. C. Ellis Dispersal. Franksville, Wisconsin, located at the junction of K and US 41 about 10 miles south of Milwaukee or just west of Racine. Sale starts at 11 A.M. 75 Registered Holsteins. T.B. Tested, Bang's Certified, Calfhood Vaccinated. Finance Available. Write for information. Piper Brothers, Sales Managers, Watertown, Wis.

IMPORTANT
Milestone in Dairy Herd IMPROVEMENT

This is the cow selected as representative of the "Millionth Cow" bred in 1957 by American Breeders Service, the largest artificial breeding organization . . . and the first in the Western hemisphere to achieve the millionth cow record during a calendar year. Over 6,500,000 cows have been bred by ABS since its founding in 1941.

Every ABS Sire has conclusively demonstrated his ability to transmit high production and desirable type to his milking offspring. American Dairymen chose ABS Proved Bulls to improve their herds over 1,000,000 times in 1957.

Ask your local ABS representative for a copy of the latest Sire Directory listing the Bulls available or write direct to American Breeders Service.

Always Looking for Great Sires and Top Technicians

AMERICAN BREEDERS SERVICE

325 N. WELLS ST., CHICAGO 10, ILL.

Serving Breeders in 43 States. Studs at: Carmel, Indiana, Madison, Wisconsin, Palo Alto, California

Special Opportunities

I HAVE MOST all breeds choice dairy cows and heifers, fresh and springers. Mountain grown are best. Will deliver. A. L. KELTNER, Greeley, Colorado. 23-*

CHOICE HOLSTEIN Cows and Heifers, open or bred, calfhood vaccinated. VERNUS STROMMEN, Blanchardville, Wisconsin. 2-6

WISCONSIN DAIRY COWS and heifers. All ages. Vaccinated. 500 to 600 lb. heifer calves, (car load lots). On hand all times. DR. HARRY T. LARSON, Route 2, Ashland, Wisconsin. 2-*

CHOICE WISCONSIN HOLSTEIN heifer calves and yearling heifers. MIKE J. BRADLEY, Denmark, Wisconsin. 2-4

DISPLAY

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Wonderful hunting companions both afield and in heavy duck marshes. Efficient, willing, hard working. Fine with children. Write for new booklet and name of nearest breeder.

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AYRSHIRES MOST PROFITABLE COWS

4% MILK

Big Milkers - - Hardy Rustlers
Good Grazers - Perfect Udders
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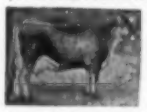
POLLED AYRSHIRE BULL CALVES

That are from high producing families
That are of Carefree Farms & Penshurst Breeding
That give you excellent type calves
That are priced at prices sure to please

WRITE FOR PEDIGREES AND PRICES
CAREFREE FARMS NEW HAVEN, INDIANA

AYRSHIRE SALE We are consigning 10 head, including a yearling bull from an Approved dam, and a bull calf from a 100,000 lb. dam, to the Florida Ayrshire Sale, Tampa, February 7. You can select from 40 head. Write for information.
STRATHGLASS FARM, Box 71, Port Chester, N.Y.



What Makes a DAIRY BREED

America's leading farm dairymen, livestock breeders, and dairy officials of agricultural colleges are today universally agreed on two facts which have greatly affected the development of the Brown Swiss breed, and always will so affect it.

These facts are:

(1) The usefulness of any dairy breed is determined by how well that breed meets the demands of the American system of agriculture.

(2) Any breed of livestock to remain useful must be hardy, rugged, long-lived, and capable of reproducing its kind.

To a remarkable degree the Brown Swiss meet these requirements of a useful breed of cattle.

For more information about the breed write:
BROWN SWISS ASSOCIATION, Beloit, Wis.

HYCREST FARMS
P.O. BOX 366 LEOMINSTER, MASS.
HOME OF:
242 classified animals that average 84.4%
216 tested cows that average 573 lbs. fat (305-2X-ME)
SPECIALIZING IN SPECIAL BULLS FOR SPECIAL RESULTS.

BRIGHAM JERSEYS

There's Profit In Production And PRODUCTION BREEDING IS OUR BUSINESS. 16 year herd average: 114 cows av. 10,422 lbs. milk, 5.3%, 533 lbs. fat, all on two time milking. Herd classification average: 116 average 85.65%, 8 excellent, 65 very good, 35 good plus, 8 good. We have a bull calf for you. Write, phone, wire,
BRIGHAM FARM St. Albans, Vermont

Rating on daughters of our homebred sire Pixy's Challenger show 11,850 lb. milk, 603 lb. fat, 2x, 305 day, m.e. basis. This is on their first five completed records. We have sons of his for sale from top production tested and classified cows. Your inquiry will receive a prompt reply.

CHAS. S. KELLY Pixy Farm
DAVID KELLY Hudson, Wisconsin

Choice Dairy cows and heifers. Jerseys, Guernseys, Shorthorns, Holsteins. Fresh and coming fresh soon, all T.B., Bang's tested. Come and make your selection, or will fill your order, or help you buy.

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EARN MORE PER COW

Long-Living GUERNSEYS produce longer at high production levels

★ Guernseys' natural inheritance of long life means high lifetime production per cow.
★ Guernseys are most practical for today's modern dairy methods. They are gentle, easy to handle . . . thus making the most efficient use of labor.
★ Guernseys are efficient roughage converters.
★ Guernsey Milk has outstanding marketability.

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Address.....
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GUERNSEYS

Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.

IDEAL GUERNSEY FARMS
AUGUSTA NEW JERSEY

GUERNSEYS

Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. Lee Burlingham, fieldman, at your service. Waukesha County Guernsey Breeders' Assn., Waukesha, Wisconsin.

Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.
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53 - HOLSTEINS - 53

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Controlling cowpox . . .

. . . is about as difficult as controlling the common cold; both are caused by viruses. Here is what you can do to prevent spread and ease the problem.

by E. A. Woelffer, D.V.M.

MORE letters come to us about cowpox than almost any other disease. Why should this be so? It ought to be relatively easy to clear up the little sores or lesions which appear on the teats when this infection is present.

Unfortunately, the problem isn't quite that easy to solve. We will try to explain the reason for this but, first, let's consider what causes cowpox, what the symptoms are, what pox lesions look like, and what we can do to control the infection.

There are two forms of cowpox; genuine (true cowpox) and natural cowpox. Both are caused by viruses. The genuine cowpox is closely related to smallpox in humans. In fact, the vaccine for the protection of smallpox is secured from the virus of cowpox.

Genuine cowpox rarely occurs in this country. It is the natural cowpox that is seen almost entirely in our herds. For this reason our discussion will be confined to natural cowpox.

Teats mostly affected . . .

The first signs of cowpox are slightly swollen, reddened, warm teats. Then little pimples appear. After one to three days blisters form. These often rupture from pressure by your hands.

The lesions sometimes become infected with bacteria or secondary invaders causing pus formation. The pox blisters usually do not all break at once so the lesions at any one time appear in different stages of development.

In a single animal the lesions may persist for one or two weeks, and in a herd for a month or more.

Usually cowpox infections are mild. Occasionally an animal will develop a fever, refuse to eat, drop in milk production, and show signs of depression.

The most common means of spread is believed to be by the milker's hands or the teat cups of the milking machine. Litter or bedding that has become infected from contaminated material, such as dried scabs, is sometimes responsible for outbreaks. Dried scabs remain a disease-producing source for many days.

It is often difficult to explain the origin of epidemics of cowpox. Outbreaks have been traced to exposure of udders to mud or filth. Outbreaks are likely to occur following flood conditions.

Purchased animals may be a source of infection.

If you bring an uninfected purchased animal into an infected herd, it will take a little over a week for the cow to come down with cowpox after she is exposed.

Treatment . . .

Treatment to promote healing is important. Satisfactory results can be obtained through the use of a variety of ointments or preparations. Most of these can be obtained from your veterinarian. Homemade salves, 3 per cent creolin solution, chlorine solution, hydrogen peroxide, and so forth, are also useful.

Lesions can be healed, but the real jolt comes when we recognize the disease cannot be cured. The symptoms keep recurring, much like the common cold in humans.

Prevention . . .

Prevention isn't always successful. However, keeping milking cows out of mudholes, and using care and cleanliness at milking time will tend to reduce spread of the infection.

If the teats are cracked and sensitive, they should be thoroughly softened before milking by dipping in warm creolin solution, Epsom salt solution, or some other preparation that will not taint the milk.

If possible, segregate infected cows and either use separate milking machines or milk them last.

Eliminating cowpox . . .

A means of getting rid of cowpox has not yet been discovered. The most likely avenue for eliminating the infection lies in the production of a suitable vaccine.

To date, a vaccine has not been produced, principally because a large family of viruses is involved. A vaccine has not been developed for the common cold in humans for the same reason. Let us hope scientific research will soon come up with a solution to both of these important viral infections.

New lethal gene

A lethal gene which interferes with development of the fetus, in certain breeds of cattle, has been reported by veterinary scientists at the University of California.

The gene, a factor in the hereditary make-up of the animals, prevents the development of the pituitary gland in the bovine fetus, eventually causing its death.

Only one line of the breed of cattle has been affected so far, veterinary authorities say. The fetus containing the lethal gene ceases to grow at seven months, but birth is delayed for an average of four months beyond the normal gestation period.

Calves delivered by surgery through the flank of the cow lived only a few minutes, the veterinarians said. Lethal genes pose little threat to a breed if the carriers can be detected and removed.

South African "soil bank"

South Africa is going to start a "soil bank" similar to ours.

The Department of Agriculture in South Africa says the bank is designed to check deterioration of the soil and avoid cereal surpluses. The Union will pay a subsidy on the establishment of grass leys and will make loans for buying livestock to eat the grass.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Maintain thrifty calves

Often the change-over from fall to winter is hard on calves, particularly in some herds. During summer and fall, digestive disturbances and lung infections usually are less of a problem than during colder weather.

If certain environmental conditions are not met and a suitable feeding program is not followed, trouble may develop. The change from open pens or pastures to close housing, often leads to trouble, especially among the young stock.

If you are having trouble, don't try to correct the scours or cough with medicines alone. Several factors usually are involved, and they need to be corrected. For best results, consult your veterinarian.

Check the following list of items. They may be found useful in giving calves a good start in life, maintaining them in a thrifty condition, and improving the welfare of the calf herd.

Feeding . . .

1. Provide colostrum for newborn calves.
2. Do not overfeed.
3. Use clean utensils. Have milk at body temperature.
4. Provide concentrates and quality hay as soon as calves will eat them.
5. Avoid sudden changes in feed.
6. Provide mineralized salt, preferably free choice.
7. Keep fresh, clean water available. Watch individuals that consume excessive quantities.
8. Provide additional vitamins, particularly A and D, if ration is lacking.
9. Supply antibiotics in some form, particularly in unthrifty animals.

Housing . . .

1. Watch ventilation; not too hot. Avoid sudden and excessive changes.
2. Avoid overcrowding, and prevent drafts.
3. Keep pens clean and well-bedded.
4. Avoid nursing. This is a common habit. It will pay you to do something about it. Either keep the calves stanchioned after they have received their milk and have access to grain; or keep them in separate pens or stalls. Some dairymen tie calves so they cannot reach each other. Sucking leads to blind quarters and uneven udders.

Retain resistance of calves by keeping them thrifty. If intestinal or respiratory troubles develop, provide proper treatment. Also be certain environmental conditions are as good as possible. Suitable conditions are important, both in disease prevention and during convalescence.

VACCINATE FOR "LEPTO"

Recently I had a cow abort from leptospirosis at seven-plus months. Last year two others aborted at seven and eight months. These have all shown negative tests to brucellosis. Those last year were not tested for lepto. My vet tells me there is a vaccine that is fairly effective against lepto. Would you advise vaccinating the herd?

Gulfport, Miss. M. L. M.

Vaccination against leptospirosis is effective in active outbreaks, particularly when used early. It is good practice to pasteurize all milk for human use. Ordinarily, milk from lepto-infected cows does not contain the organisms. Since the organisms are shed in the urine, it is possible for the milk to become contaminated and be a source of infection in humans.

TO PREVENT KETOSIS

Lately about one-third of my herd has had acetonemia (ketosis). I feed a 14 per cent feed of a good mixture, number-one, second-cutting birdsfoot trefoil, and number-one, first-cutting alfalfa mixed, plus good corn silage. I also feed molasses.

Lakesville, Conn. O. L.

The exact cause of ketosis is not known. Here are some recommendations that have value in preventing or reducing the disease:

1. Do not have cows excessively fat at calving time.
2. Feed quality roughages at least three times a day.
3. Bring cows up to full feed as rapidly as possible after calving.
4. Avoid quick changes in the ration.
5. An additional preventive measure is to feed ¼ pound of sodium propionate to each animal for three days prior to and six weeks following calving. Sodium propionate is rather unpalatable and sometimes needs to be given as a drench. Some companies are mixing it with the feed.

INFECTION IN HOOF

Lately I have had some trouble with sores and foot rot in my herd. While most of the trouble cleared after the feet were washed in a disinfectant solution and the cows walked in lime, I have one cow on which I have used penicillin shots and soaked her feet in bluestone copper sulphate; still she does not respond. Her foot is inflamed around the top of the hoof and stays swollen.

Will appreciate any remedy you can give me.

Coward, S. C. R. H. G.

If the foot does not respond to antibiotic or sulfa treatment, which apparently is the case in your cow, it is likely there is localization in the joint and removal of the affected claw is indicated. We suggest you contact your veterinarian.

CHRONIC MASTITIS

I have several cows in my herd with one and two light quarters. They don't have mastitis.

What causes this condition?

Richton, Miss. W. J. S.

Cows often have a chronic (slow-developing) mastitis without showing clinical symptoms. This would appear to be the cause of the light quarters. We suggest the quarters be treated during the dry period.

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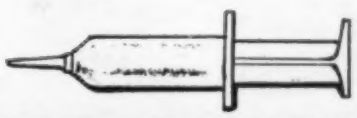

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If you are milking a herd of cows for profit, good cow milking still has to come first. No amount of high priced pipe and numerous other fittings will ever make a good milking machine out of a bad one.

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Don't get so excited about new ways to handle cows and easier ways to handle milk that you forget that good cow milking still comes first.

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